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More Canadian News Print Mergers Possible

New Alignments of Existing Organizations and Price Situation Believed to Have Been Discussed At Recent Meeting of News Print Executives—At Present Quotations Companies Are Not Making Logical Profits—Expansion In Capacity Disturbing Factor —Increased Consumption May Absorb Additional Output

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 9, 1929.—There is quite a little speculation here regarding the possible meaning of meetings of certain news print executives which are stated to have been taking place in Montreal. In the absence of definite information, the inference has been drawn that two subjects have been discussed, namely, the price of news print and further mergers of existing companies.

In regard to the first point, it is generally agreed that despite drastic reductions in the cost of production, the companies at the present price, are not making the profits to which they are logically entitled. The situation would be clearer were it not for the fact that the steady increase in the export of the Canadian product is offset by the expansion in capacity which is still under way, and the deduction is drawn that there can hardly be any general improvement in the price situation while the problem of new machines coming into production looms ahead. It is believed that care will be taken to see that the new tonnage will be produced and distributed in a manner which will not disorganize the market, but the problem remains as a complicating factor and as a deterrent to hopes of higher prices for the present.

New Capacity To Be Added

It would appear that between now and the early part of 1931 the new capacity to be added to Canadian mills will be from 1,100 to 1,150 tons of news print per day; in other words, that the capacity will be increased from 10,388 tons per day—which is the rating of the Newsprint Service Bureau—to 11,600 tons. Increase in consumption is expected to absorb this with all the mills running around the present capacity, so that while the present situation regarding output to capacity may not be affected, no marked improvement can logically be looked for during the coming year.

At present St. Lawrence Paper Mills have two machines installed but inoperative. Price Bros. recently completed the installation of two machines at its Riverbend mill. The Mersey Paper Company will have two machines of 250 tons daily capacity ready for operation this fall. International Paper Company is bringing to completion its Dalhousie plant with a capacity of 500 tons daily.

In regard to the second subject supposedly discussed at the meetings of news print executives, namely, the possibility of further mergers in the industry, the gossips appear to talk with more confidence. There is confident talk of the merging of the Wayagamack Company with Canada Power and Paper, and it is said that the Abitibi Power and Paper Company may enter into new alignments. Rumors of such developments are persistent, but then they have been so for the past six months.

Forest Fire Situation Acute

The long spell of dry weather, more or less persistent throughout the whole of Canada, has brought this country face to face once more with serious forest fires in every one of the great forest areas. In Eastern Canada the forest services have so far been able to control all fires in their incipient stage. Among other things it is now a common sight to see forest rangers with fire extinguishing apparatus following trains through wooded areas on gasoline scooters, ready to extinguish any fires that may be caused by sparks from the locomotives.

Further west, however, the situation is different. According to telegraphic advices received by the Canadian Forestry Association there are bad fires in Ontario from Nipigon west, and in Manitoba, Saskatchewan, and the southern interior of British Columbia.

Developments in British Columbia

From Vancouver it is announced that the Powell River Company, Ltd., is planning a new unit which will give the combined mills of the company a daily capacity of 1,000 tons of news print, as against the present capacity of 475 tons. The plans are conditional on the company being granted power rights at Lois River, Gordon Pasha Lake, near Stillwater.

The reconstruction work being carried out by Pacific Mills, Ltd., at its Ocean Fall plant, will be completed this fall. The company is a subsidiary of the Crown Willamette Pulp and Paper Company, of Oregon.

The British Columbia Pulp and Paper Company has adopted a development program which, it is said, will involve an expenditure of $1,000,000. At present the company is producing 210 tons of bleached and easy bleaching pulp per day.

Gatineau Power's Additional Load

The Gatineau Power Company, a subsidiary of International Paper Company, has just commenced delivery of an additional 50,000 h.p. of electric energy to the Hydro-Electric Power Commission of Ontario. This quantity of power, originally scheduled for delivery on October 1, increases to 130,000 h.p. the total energy now being delivered by Gatineau Power Company to the commission. The energy is being sent over a 220,000 volt transmission line 230 miles long—one of the largest on the continent—and is being distributed by the commission in the Toronto area to supplement the power from Niagara Falls.

Pennsylvania Paper Mills Are More Active

Fine and Wrapping Paper Plants Reported Busy In All Divisions—Specialized Lines Afford Employment to Many Mill Workers—Book Papers and Fancy Writing Papers Move In Excellent Volume Under Contract Purchasing—Kraft Market Fairly Steady

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 9, 1929.—As the Quaker City associates of the paper trade settle down to the business of Fall preparation with the passing of vacation days, there is more activity in all branches of the industry. With a steady market to start the new Fall stocking, distributors are more confident in the outlook for the future. Not since the war has the paper market been stabilized as it is at present. With no price concessions made throughout the summer doldroms, and with no heavy stocks on hand to be disposed of at low prices, dealers can confidently face the closing months of the year assured that the paper industry will be conducted along more profitable lines than since the post war readjustment began.

Manufacturers are more active in all divisions of the fine and wrapping paper branches. Specialties have given employment to many mill hands through late weeks. This specialized business has aided in maintaining manufacturing schedule when drifting business would have stagnated operations among the intermediate producers of paper lines adapted for the wrapping paper dealers. With the creation of direct mill representation and the establishment of local offices by the larger manufacturers who are selling direct under contract to the consumers, it has been necessary for the dealers to seek out sources of sales for these specialized lines and so maintain distribution. There has been particularly gratifying business maintained by mill representatives and wholesale merchants this summer and this has contributed to the lessened activity of the distributors who have been obliged to confine their orders to smaller lots needed from day to day.

Book papers and certain grades of fancy finished writing papers have been moving in good volume under contract buying. Since late August there has been an improvement in the coated grades. The market has been glutted with offerings of cheaper grades of writing papers lately but since mid August the demand has been steadier and offerings have been more restricted. Stationers supplies are now moving in greater volume. The kraft market continues steady but buying is not up to standard for this season. While there is a somewhat improved demand for kraft papers, specialties in this class of converted products are more sought than general lines. Paper boards are in demand but still hold to lower values. Roofings are steadier. Container boards are brisker.

Supplies of paper stocks are being bought more freely by manuacturers with few accumulations to be found in the better grades. There has been no upward revision in prices on the higher priced stocks but dealers look for revision to higher levels if the present demand continues owing to the scarcity of supplies on hand. Cheaper grades are more plentiful but are still at rock bottom levels. Like the waste paper grades, rags are more active, with no price changes. The cheaper grades are the leaders in demand.

Association Meetings to be Resumed

The two leading Philadelphia paper trade organizations will resume their sessions in the coming week. The Philadelphia Paper Trade Association will meet next Wednesday at the Bourse Restaurant. The Paper and Cordage Merchants Association will meet at the Adelphia Hotel on September 20, when the presentation of the Golf Cup will be made to J. H. Murray, winner of the 1929 championship held at the Richmond Country Club. The cup was presented to the organization by the Schuylkill Paper Company as an annual trophy to be held throughout the year by the winner and to be kept upon winning three consecutive games. So far the winners have been E. L. Richards, manager of the Philadelphia branch of the Buffalo Envelope Company and secretary of the association, and Mr. Murray, who will be honored at the next meeting.

Russhyde Mark Changed To Russoid

Following the advice of the Federal Trade Commission, the Russell Leather Fibre Company, manufacturers of the Russhyde imitation leather paper of this city, have changed the title of that product to Russoid so as to not conflict with imitation leather substitutes made by other industries. This product, which is made along similar lines of coating and graining as real leather, has been on the market for two years. While it has all the qualities of leather, its cost is one-third that of the true product and it is grease proof and water proof and will not so readily deteriorate. It is used extensively for loose leaf binders, book covers, inside linings for shoes, luggage, hand bags, belts and numerous other purposes where leather heretofore has been the main material of manufacture.

Atlas Paper Company Expansions

Since acquiring the quarters of the Eli Resnick Company at 2nd and Vine streets, the Atlas Paper Company has materially extended its line of products. In the large four story structure the firm has stocked additional lines of paper napkins, twines, butter chips and doilies, which are distributed along with wrapping papers and bags. The firm is distributor for Hunts Modern Paper Products. The business was recently removed from 253 North 2nd street for the purpose of carrying out the plans of Jacob Zacher, head of the firm, for extension of business.

Shyrock Bros. Improvements

Shyrock Brothers paper mills in Downingtown, Pa., are fitted with a new mixer which provides for a capacity of 2,000 additional pounds of pulp used for the manufacture of binders boards in which that firm specializes. The new mixer was installed by the Downingtown Manufacturing Company, builders of paper making and paper converting machines. The new mixer brings the beater room up to date and provides this century old firm with modern devices for the production of pulp for its own use. In addition to the modernizing of the beater room the firm provides for the installation of a new 70 foot stack to be erected at the mill. The new units were added during the summer months, after a brief delay in construction owing to the large amount of orders accumulated for its line of binders boards.

John M. Driver Co. Opens New York Office

The John M. Driver Company, converters and manuacturers of glassine bags and wraps and cellophane products of like character, has opened a New York office at 417 Canal street which will be the main executive headquarters, while the factory continues in the Quaker City. With the opening of the metropolitan office announcement is made by John M. Driver, head of the firm, of the plans to extend branch offices in various parts of the country. There shortly will be added branch offices in Boston to augment headquarters in San Francisco, for the Pacific Coast trade, in New Orleans to look after the Gulf States; Atlanta, Ga., to take care of the extreme southern territory; and in Baltimore to look after business below the Mason and Dixon Line. The nationally distributed offices will feature the Driver products in glassine and cellophane bags, wraps and containers. The Driver company has patented its own special equipment which permits of printing on cellophane in one or more colors and has developed a diversified use for cellophane wrappers among many industries

which heretofore could not use glassine. The local factory covers almost half a city square and is complete in art, cutting, printing and converting departments. The firm maintains a large staff of artists who design and originate novel and attractive designs in glassine and cellophane wraps and sacks. It has been established for more than a decade in the Quaker City.

Caukenell Bag Co. Develops Philadelphia Field

The Caukenell Bag Company, which recently entered the converting business with plant at Richmond, Va., has developed a wide following of patronage in the Quaker City for its line of garment, banana and other large size sacks. The firm recently brought to the trade here its line of bags through its representative James H. Steinmetz, who introduced the Caukenell garment, banana, flour and paultry sacks to the Philadelphia dealers. The sacks have been popular since their advent this summer and dealers have built up a nice trade in the larger sizes made under the direction of the Caukenell management along original lines.

Gift and Art Shows In New England

Following the Gift and Art Association's plans to exhibit gift objects in the East at various points in the Fall and Springtime, there will be staged in New York this week at the Hotel Imperial the annual Autumn display of the National Gift and Art Association and in the following week at Boston in the Parker House. There will be included in the exhibits many paper gifts and novelties that are made of papers such as party novelties, crepe goods and papeteries and like lines as well as fancy wrappings for gift goods, and paper twines and novelties.

Leipheimer-Missimer Co. Develops Rayon and Silk Waste

Having developed a specialized business devoted to the wholesaling of waste and featuring largely rayon and silk grades, the firm of Leipheimer-Missimer, 210 South Front street, is now opening a new department devoted to the sale of new mill ends, cotton waste and wiping rags, as well as old rags used by the paper industry. The new department will be under the management of Irvin Leipheimer of the firm. The firm also imports these raw materials.

Unloading Wood Pulp at Albany

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 9, 1929.—A large force of stevedores have been engaged during the past few days in unloading 1,500 tons of wood pulp from the decks of the American freighter *Chippewa* which arrived here from Quebec after a trip down the St. Lawrence and around the Atlantic Coast. The cargo was consigned to the A. P. W. Paper Company and Donald G. Kibbey, traffic manager of the firm, was on hand to greet the officers of the ship when it arrived.

According to Captain John Allison, master of the boat, very little damage was done to the craft when it ran aground in the Hudson River near the bridge south of the city. The boat lay on a sand bar until night when she was floated off by tugs at high tide. The *Chippewa* is the first American freighter to make the trip up the Hudson in years. The shipment was the tenth received by the paper company over the new waterway during the current season.

New Zellerbach Co. Head

SAN FRANCISCO, September 5, 1929.—Election of H. L. Zellerbach to the presidency of Zellerbach Paper Company, subsidiary of Crown Zellerbach Corporation, was announced today by M. R. Higgins, chairman of the latter corporation's executive committee. H. L. Zellerbach assumes the duties of I. Zellerbach, who was elected chairman of the board at the same meeting.

Both officials retain their respective position in the parent Crown Zellerbach Corporation. The new president of Zellerbach Paper Company is a vice president of Crown Zellerbach. I. Zellerbach is president of the same corporation in addition to the recently assumed office of chairman of the Zellerbach Paper Company directorate.

Paperboard Industries To Meet in Chicago

The next meetings of the Paperboard Industries Association and of the Trade Practice Administration will be held at the Drake Hotel, Chicago, as per the schedule shown below.

P. I. A. Group Meetings, Wednesday, September 18.

Trade Practice Administration Session and P. I. A. General Meeting, Thursday, September 19. Meetings will be held in the Tower Room, Drake Hotel, Chicago.

WEDNESDAY, SEPTEMBER 18, P. I. A. GROUP SESSIONS

Meeting of	(Daylight Saving Time)
Folding Box Group	9:00 A.M.—11:00 A.M.
Paperboard Group	11:00 A.M.— 1:00 P.M.
(Recess for Luncheon)	1:00 P.M.— 2:00 P.M.
Container Group	2:00 P.M.— 4:00 P.M.

THURSDAY, SEPTEMBER 19, 1929:

Trade Practice Administration General Session	10:00 A.M.—12:00 N.
Luncheon (All Members)	12:30 P.M.— 1:30 P.M.
Paperboard Industries Association General Meeting	1:45 P.M.— 4:00 P.M.

COMMITTEE MEETINGS, TUESDAY, SEPTEMBER 17

Notices will be mailed calling Committee Meetings at the Drake Hotel, as follows:

P. I. A. Standing Committees	10:00 A.M., Sept. 17, 1929
P. I. A. Executive Committee	10:00 A.M., Sept. 17, 1929
Trade Practice Administration Industry Committees	1:30 P.M., Sept. 17, 1929

NOTE: The Paperboard, Container and Folding Box Industry Committees will meet separately.

Trade Practice Administration Board of Directors—Immediately following the meetings of the Industry Committees.

In accordance with the foregoing schedule, the meetings of the P. I. A. Executive and Standing Committees will be held Tuesday morning, September 17.

Tuesday afternoon, September 17, the three Trade Practice Administration Industry Committees (Paperboard, Container and Folding Box) will meet separately and discuss the problems of their particular industry. Upon adjournment of the Industry Committee meetings, there will be a meeting of the Board of Directors, Trade Practice Administration.

NOMINATING COMMITTEES TO BE APPOINTED

At the September meetings, each of the three P. I. A. Groups shall appoint two members to serve on the General Nominating Committee, which shall nominate a President to be elected at the November (Annual) Meeting.

The individual Groups shall also appoint Committees to submit nominations for Group Officers (i.e., Group Vice-President and Group representatives on the Executive Committee) for election at the Annual Meeting in November.

THE TRADE PRACTICE SESSION, SEPTEMBER 19

At the above meeting, detailed reports will be submitted showing accomplishments as of that date in administering the trade practice rules. Several complaints have been effectively handled and several cases are now in the process of handling.

Members are being urged to attend the meeting, so as to receive first-hand information as to what is being done and what should be done to improve conditions in the industry.

Price Bros. Reap Reward

It is now reported that Price Bros. & Co. have disposed of part of their holdings in the Aluminum Corporation at between $450 and its record high of $539 a share. Price Bros., when they sold their Chute a Caron power site to the Aluminum Company received in exchange a block of preferred shares and in addition 36,000 shares of common stock, which then had a nominal value of $5 a share. At current levels these shares would now have a value of some $12,000,000. All Price Bros.' investments are carried on the books at $3,600,000.

Canadian Board Mills Announce New Prices

Most Grades of Paper Board Are Generally Revised Upward, Although A Few Lines Are Slightly Reduced—Chipped Board Now Quoted at $45 and News Board At $50—Single Bleached Manila Lined Now Selling at $65

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 9, 1929.—A new price schedule for the products of the Canadian board mills has just come into effect with a general revision upward and with a few lines slightly reduced in price. The advance in quotations has been looked for for some time in pulp and paper circles and they follow a general agitation among the board mills for prices that will yield them a little more profit than they have been getting in the past. It has been about a year since the old prices were revised and the industry to some extent has been suffering from over-production although this condition has now been overcome and the board trade is back to normal. Following are the new quotations now in effect: chipped board, car lots, $45.00; chipped board, less than car lots, $47.50; screening board, non-folding colored gray, car lots, $50.00, less than car lots, $52.50; pulp boards, non-folding, $62.50; white vat-lined chip or screening, $60.00; news board, car lots, $50.00, less than car lots, $52.50; chip board (folding), car lots, $50.00, less than car lots, $52.50; folding screening, colored gray, $55.00; pulp board, filled or solid, $67.50; single bleached manila lined, $65.00; double bleached manila lined, $80.00; single manila lined, chip or screening folding, $65.00; test board, .65 test, $48.50; .85 test, $51.50; 110 test, $55.00; white patent coated, No. 1 solid manila, butter carton stock, $115.00; No. 1 news center, manila back, $105.00; No. 2 soft white shavings and unbleached sulphite, solid manila, $100.00; No. 2 news center, manila back, $95.00; No. 1 news back, $95.00; No. 2 news back, $85.00; color differential, light colored, one side, $5 extra; dark colored, one side, $10.00 extra, applicable to all grades excepting screening board, plain and chipped board and straw board. These prices are all f. o. b. mill.

Forest Fires Still Devastating

Forest fires in Northern Ontario and Manitoba continue to take their toll of valuable pulpwood timber. The situation throughout the Kenora, Rainy River and Patricia districts continues serious and no relief through rain is in immediate prospect. In the Kenora district, in addition to a number of comparatively small fires, there are a couple of widespread ones doing heavy damage. One of the southeastern sections of the Lake of the Woods pulp concessions is destroying valuable pulpwood and timber, while another is raging north of Redditt on the English River pulp concessions. It is at present burning in a section of timber blown down three years ago, but will likely spread to the standing timber unless rain comes quickly. To the west the fires from Manitoba are breaking over the Ontario border on extensive fronts and there is considerable danger in that quarter. All this week the smoke lay like a pall over the district and the visibility was so poor that the planes of the forestry branch found it almost impossible to take in supplies for the various fire-fighting gangs. Battling their way over fire swept and smoke-ridden country, aviators who have reached the Pas, in Manitoba, this week brought direct news of the flaming frontiers of Saskatchewan and Manitoba. It was stated by them that forest fires all over the northern and northwestern provinces are worse this year than at any time in the past, with numerous fires beyond control of the comparatively small number of men fighting them.

Westminster Paper May Issue Stock

While no announcement will be made until the return of J. J. Herb, president, it is understood, that a new stock issue is contemplated by the Westminster Paper Company, Ltd., to finance the erection of a new plant to replace the one recently destroyed by fire. Meanwhile a financial statement is being prepared by Price, Waterhouse Company, Ltd., Toronto, to show the exact position of the company as regards finances, insurance, etc. This statement will be completed shortly, and it is expected to clear the way for definite plans to finance reconstruction. As the amount of the bond issue was $165,000 and insurance was reported to be carried to the extent of $300,000, the bond holders were fully protected. Mr. Herb, who started the Westminster company several years ago, was formerly with the Interlake Tissue Mills, Ltd., at Thorold, Ont.

Coal For New Ontario Paper Mills

An announcement of importance to the paper mills in New Ontario was made by Premier Ferguson in Toronto this week when he declared that coal, long one of the few minerals which New Ontario's mining fields had failed to show, has been discovered in vast quantities on the Abitibi River, 90 miles north of Cochrane. According to expert estimates, there are from 7,000,000 to 10,000,000 tons of lignite, a low-grade coal, lying in a bed one mile long by half a mile wide at Blacksmith Rapids. Premier Ferguson described the discovery, which has been checked cautiously by Mines Department officials under Charles McCrae, as the most important mining development in Ontario in many years. The coal can be marketed at from $5 to $6 a ton, exclusive of freight charges, in the belief of Dr. W. S. Dyer, provincial geologist, who has spent three summers working on the development.

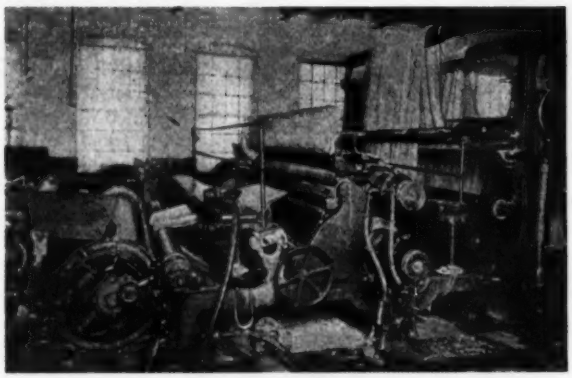
Judging by the returns from the tests conducted by the Federal Government laboratories at Ottawa, Dr. Dyer considers that, partially carbonized, this lignite may be used profitably by some of the large New Ontario paper mills, such as the Kapuskasing plant, where 500 tons of coal a day are consumed. A complete mining camp, equipped to sink a shaft, will be established immediately, Premier Ferguson stated, to provide coal for further tests to determine the extent of the fuel's industrial and domestic uses. It is suggested that the fuel might prove suitable for use on the T. & N. O. Railway. To establish the mining camp Dr. Dyer and Thomas F. Sutherland, Acting Deputy Minister of Mines, will leave for Blacksmith Rapids next week. By next spring, in all probability, the T. & N. O., which now is being pushed on James Bay, will have been extended from the present end of steel at Coral Rapids to Blacksmith Rapids, a distance of 30 miles. Blacksmith Rapids lies 57 miles south of Moose Factory and almost on a line between the latter point and the present railway terminus. At the last session of the Legislature, a vote of $25,000 was given the Minister of Mines to carry on diamond drilling which has resulted in the present announcement.

Joseph L. Seiler Forty Years in Paper

Forty years ago, on September 1, 1889, Joseph L. Seiler, vice-president and director of sales of the Warren Manufacturing Company, first went to work for that company in the small mill office at Riegelsville, N. J. At first his duties were mostly concerned with office detail, but becoming interested in the sale of the mill's products and given the opportunity by John S. Riegel, then the general manager of the company, he became actively engaged in the sale and distribution of "Riegel's Papers." He was made secretary of the corporation in 1909, became a director in 1914 and was elected vice-president in 1921. Mr. Seiler's keen judgment and foresight together with his knowledge of distribution and marketing has been of immeasurable aid in the building of the prosperity and good will the company enjoys today.

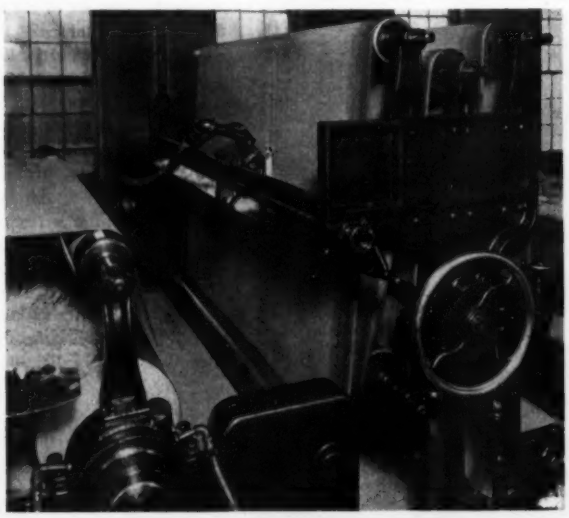
Mr. Seiler's friends and associates congratulate him most heartily upon his fortieth anniversary in the paper business.

WHILE YOUR MACHINE IS DOWN



During your half-hour shut-downs for washing and roping felts by the old hand method, some other mill, equipped with Vickery Felt Conditioners, is keeping right on making paper—your kind of paper.

Let us put a Vickery Felt Conditioner to work for you, on trial.



VICKERY FELT CONDITIONER

BIRD MACHINE COMPANY
South Walpole ◆ Massachusetts

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Paper Mill Activities in Fox River Valley

Riverside Fibre & Paper Co., of Appleton, Commence Construction of New Warehouse to be Used For Storage of Raw Materials and Paper—Northern Division of American Pulp & Paper Mill Superintendents' Ass'n., and News Print Service Bureau, to Confer

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 9, 1929.—Construction of a new warehouse has been started by the Riverside Fibre and Paper Company, Appleton, Wis. The contract has been awarded to C. R. Meyer & Sons Company.

This addition will be 154 feet long and 46 feet wide, and will be of face brick and reinforced concrete. It will be used for storage of raw materials and paper. The building will cost approximately $16,000.

Mill Problems to be Discussed

Members of the northern division of the American Pulp and Paper Mill Superintendents Association and the News Print Service Bureau, will hold their fall meeting at Marinette, Wis., on September 20 and 21. Officials of the Marinette and Menominee Paper Company and other concerns of that city will be the hosts, with Paul Sievert as chairman of the arrangements. An attendance of 200 is expected, mostly from Wisconsin and the upper peninsula of Michigan. The program has not been completed, but will include some interesting discussions of mill problems.

Corn to Address Safety Council

A luncheon and afternoon meeting will be held on September 12 by the Fox River Valley and Lake Shore Safety Council at Green Bay, Wis. E. W. Corn, of the National Safety Council general staff, will be the speaker. This will be one of the largest meetings of the council, consisting of fifty men. The council is the executive body of the Fox River Valley Safety Conference, and consists of representatives from each city in the larger organization. This smaller group is holding occasional meetings to prepare the real working program of the conference, since the conference itself is largely an inspirational meeting and too big for the transaction of business. Plans will be made for the annual spring conference of the valley. C. R. Phenicie, of Green Bay, is chairman.

Forest Fires Threaten Pulpwood Areas

A serious threat to the pulpwood areas of Wisconsin manifested itself during the last week in forest fires over an area of 40,000 acres. Continued dry weather made the wooded areas highly susceptible to fires and they were raging in several areas at the same time. While the Wisconsin Conservation Commission's organization of wardens succeeded in early detection in most cases, yet the fires could not be checked until heavy rains, the first in weeks, came to their relief. No virgin timber happened to be in the burned areas. Almost all was cut over land. Part of it was in the Moquah National Forest, on land that is to be replanted next year. It is believed that the rains and cooler weather will prevent any more outbreaks.

Northern Paper Mills Damaged by Fire

Damage estimated at $2,000 was caused at the Northern Paper Mills, Green Bay, Wis., last week by fire starting in an acid house. A shed on top of the acid house was destroyed, and damage was caused by water which seeped into the building itself.

News of the Industry

Several paper mill owners and others closely allied with the paper industry are the directors of the North Shore Country Club, a new golf organization which has just been formed. The corporation is building an 18-hole golf course on the north shore of Lake Winnebago, near Neenah and Appleton, Wis. The board of directors consists of J. N. Bergstrom, R. S. Powell, M. A. Wertheimer, E. H. Mahler, W. C. Wing, Charles S. Boyd, F. J. Sensenbrenner, J. C. Kimberly and Mowry Smith.

M. B. Peacock, head of the order and planning department of the Marinette and Menominee Paper Company and the Victory Bag and Paper Company, of Marinette, Wis., has been transferred to Chicago. He is to be assistant to the western sales manager of the Continental Bag and Paper Corporation. A farewell dinner was given Mr. Peacock by officials and employees of the mills and he was presented with a traveling bag. He intended to go to New York first, to spend two weeks at the company's main office. Mr. Peacock is succeeded at Marinette by Harry E. Munson. Mr. Munson will be assisted by Harvey S. Borman in the paper departments, and by Harold P. Sunstrom in the bag department. Peter Vandenberg will continue in charge of the planning department at the Victory factory and will be assisted by Alfred Villeneauve.

George Christoph, athletic coach at Lawrence College, Appleton, Wis., has resigned in order to accept a position with the Kimberly-Clark Corporation, Neenah, Wis. He will be in the personnel department where it is expected that his past experience will be of value.

Our Forestry Policy May Bankrupt the World

That America may bankrupt the world by the continuance of her extensive wasteful handling of her forests was asserted by the late Lord Northcliffe. Forestry and land statistics give this statement considerable support, says the New York State College of Forestry, Syracuse University.

The only event that can prevent the fulfillment of this prophecy is a reversal of the practice of forest destruction generally established in the United States and the adoption of a policy of forest conservation to the end that consumption and production will balance. If we continue in our present practice, it will require one billion nine hundred acres, when the virgin forests are gone, to supply the amount of timber we now use. Where and how may all this land be obtained? Combining the forest land with all the agricultural land, we still would not have enough. There is not enough land in the United States to supply us with timber on the basis of our present wastefulness. Here is where Lord Northcliffe's idea comes in. America would have to go to Europe for timber supplies because it is obvious that we could not use all of our land for forests, in fact our present and prospective forest area is practically established in the neighborhood of less than five hundred million acres or one-fourth of the total land area.

The United States today uses 54 per cent of all the timber produced in the world. But our established forest area of less than five hundred million acres would be only enough to yield about one-fourth of the lumber needed and this is assuming that as the population increases, consumption will remain the same. So it is obvious that we would have to depend on other countries by offering prices that could not be matched by them. Thus we might bring about the conditions which Lord Northcliffe anticipated would follow the continuance of our present methods of cutting four times as much timber as we grow, wasting three times as much as we use and neglecting to reforest cutover land.

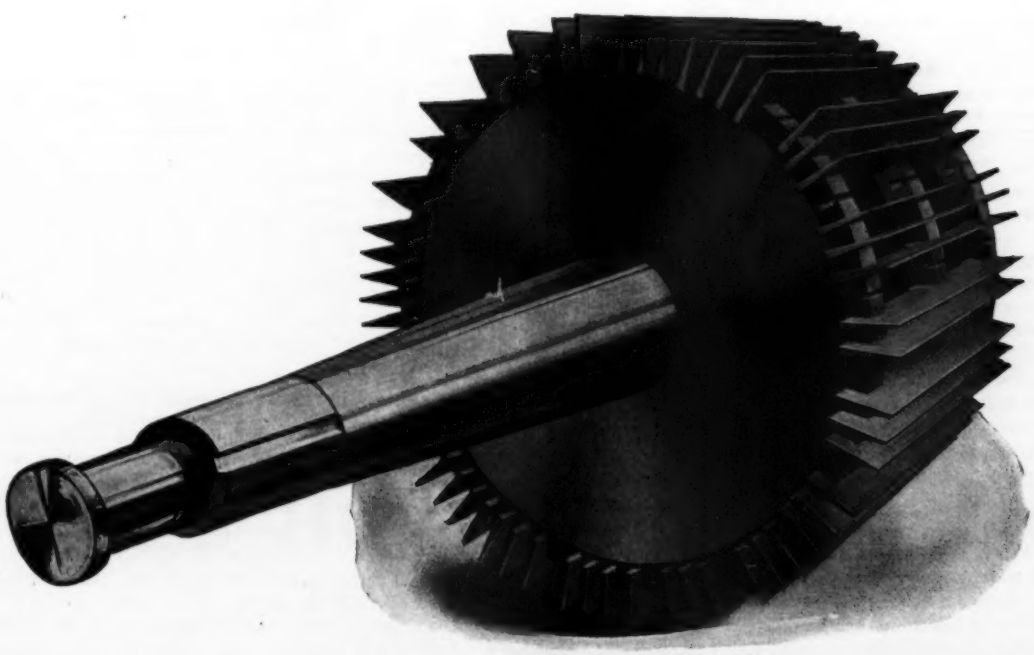
Norwegian Kraft Mills Busy

WASHINGTON, D. C., September 11, 1929.—The Norwegian market for printing papers has been comparatively good, while the wrapping market, with the exception of grease proof, continues rather quiet according to reports received here. The kraft mills are reported to have orders ahead for several months, but mills making M. G. sulphite and cap papers are finding conditions less encouraging.

New Beater Rolls Old Rolls Rebuilt

Downingtown makes beater rolls of all kinds, both bandless and banded and rebuilds old rolls of all makes to the bandless type, frequently saving the cost of a new shaft. The illustration shows a Downingtown Bandless Roll partly filled,—note how the fly bars fit into dovetail slots in the head. This construction has withstood the test of time in mills making many grades and the number of repeat orders received is undeniable evidence that they meet all mill conditions. Our Bulletin 113 fully describes Downingtown Beaters and Rolls. Send for it.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.



Demand for Paper Is More Active in Chicago

Practically All Standard Grades of Paper Are In Proper Condition to Make Most of Stimulated Buying Period Anticipated During Closing Months of Year—News Print Market Exhibiting Strong Undertone—Fine Paper Industry In Satisfactory Position

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 9, 1929.—There seemed to be plenty of activity in Chicago paper markets as the first week of September drew to a close. Reports from all lines of paper indicate that the fall season is swinging into line in good shape with most grades in the proper condition to make the most of a stimulated buying period.

Highlights in the general market news include reports on the news print industry. Increased advertising has made itself felt in demand for news print, and production is said to be going forward steadily in an equally stable market. Board representatives still have quirks to straighten out in their price schedule. Demand in fine paper is satisfactory. The same is true in krafts, etc.

Paper Salesmen's Golf Tournament

One of the big days of the Salesmen's Association's golf calendar is slated for September 19. Not only is that day a red letter day in Chicago but it will attract other divisions from all over the United States. A big crowd of salesmen are expected at the Wilmette Country Club to compete for special prizes. Foremost in interest, perhaps, is the president's prize, put up by President Sam Knode and competed for by all the divisions of the association. Another event that always gets the interest of the salesmen is the competition for the Harbison trophy. All divisions get another chance at a leg on the trophy which is given out as the prize for a team event. The Chicago division was the winner last year. The Chicago salesmen have a special prize of their own to compete for—the prize offered by Harold Knott, vice president at the head of the Chicago group. Prizes for guests, low net, low gross, etc., will round out a big day.

News of the Trade

The Westvaco Inspirations for Printers, Number 47, is a most interesting study in red and black and white with the cover starting it out in striking fashion. Throughout the book are a number of good examples of black and white work and of black, red and white effects. Some of the text is printed on Marquette Enamel and the remainder on either Westvaco Offset or Clear Spring Super White. The cover is of Westvaco Folding Enamel.

Another interesting piece of direct mail is that of the Strathmore Paper Company announcing a series of page advertisements to run in the *Saturday Evening Post* with the purpose of educating printing buyers on the use of good papers. Selections are suggested from either of the "Distinguished", "Prestige", Everyday" or "Decorative" groups of Strathmore papers. The text and illustration is printed on Alexandra Japan, Cream, Plate Finish.

The J. W. Butler Paper Company has issued an attractive book of samples and discussion on Beckett Text paper, colors white and india, with both laid and wove finishes. Actual advertisements borrowed from national advertisers provide the basis for an educational discussion.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 9, 1929.—Arthur E. Ham & Sons are issuing a booklet containing samples of Marlowe, including the new color, Sudan, a warm mellow green, made by the Worth Paper Company Association, Mittineague, Mass. The front cover shows a village of picturesque England, which the name Marlowe recalls.

Louis E. Vose, vice president of the Hollingsworth & Vose Company, entertained the members of the staff at the Boston office and also that of the East Walpole mill and heads of departments of the mills with a corn roast at his estate at Walpole, Friday, evening, September 6. It was the fifth annual event given by Mr. Vose and was enjoyed to the utmost by the appreciative guests, numbering about 100. After the corn roast, a pantomime entertainment and selections by a quartet, all rendered by employees at the mills, were given. Dancing featured the latter part of the evening. Preceding the corn roast, a program of contests was run off, including rolling pin iron man, horse shoe pitching, milk bottle and clothes pin contest, hammer and nails contest, kisses contest, apple race, opera glass contest, pipe race, bean bag race, and egg race. Beautiful and enduring prizes were awarded to the winners.

The first meeting of the New England Paper Merchants Association for the season of 1929-30 is to be held at the Harvard Club of Boston Thursday evening, September 12.

E. M. Davenport, treasurer of the Spaulding & Tewksbury Company, has returned from Southwest Harbor, Me.

Charles W. Fields, of the Baird & Bartlett Company, has returned from Bristol, N. H.

Thomas Compton Walsh, advertising manager of Hollingsworth & Vose Company, returned from his vacation last week.

A final account filed for allowance in the Superior Court of Massachusetts by Henry L. Harrington, former president and temporary receiver of the Berkshire Hills Paper Company, Adams, Mass., allots to the First National Bank of Boston, largest common creditors, a final dividend of $3,359.87 on its claim of $582,299.98. Other common creditors will receive dividends in the same proportion.

Lumbermen's Association Has Outing

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., September 9, 1929.—The twelfth annual outing of the Adirondack Lumbermen's Association was held on Saturday, September 7, at the Hotel Champlain on Lake Champlain. E. H. Henry was head of the committee in charge of the event, being assisted by the following.

Entertainment and arrangements, E. R. Carroll, Francis Callanan and F. C. Pond; reception, S. R. Mead, Louis F. Kendall and James Murphy; sports, Herbert Mason, C. M. Putnam and H. A. Bigby; program, H. P. DeLong, Guy H. Ralph and J. E. Shinners; invitation, Thomas McPhillips, George W. Doty and William M. Bronk; membership, J. P. McGarry, F. J. Buckley, S. V. Streever and O. T. Griffin; golf, J. E. DeRidder, Vernon Lamb and William H. Mason; ladies' entertainment and arrangements, E. R. Carroll, H. J. Willard and A. W. Callanan.

Steam Engineers Request Wage Increase

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 10, 1929.—A conference was held last week over the demands made by the Steam Engineers Union for an increase in wages of 20 per cent between Adam Wilkinson, labor commissioner of the American Writing Paper Company Inc. on whom the demands were made some time ago, Fred Knight of the State Board of Conciliation and Arbitration and H. A. Russell International Supervisor of the engineers. The demands restore the wages of 1922 if granted.

A new wage schedule will be submitted to the company in a few days it was learned later. There is no likelihood of any labor trouble as the union has offered to arbitrate their differences if they cannot be ironed out. There are about 26 steam engineers employed by the company.

1930-1931

As agents for the following Swedish mills we are now quoting for deliveries over the years 1930 and 1931

UNBLEACHED SULPHITES

Korsnas: K crown B (Mitscherlich process)

Svano: Extra L (Mitscherlich process)

Storvik: HS (Mitscherlich process)

Hornefors: MDM—D—DM

Robertsfors: RI—R—RM

BLEACHED SULPHITES

Domsjo: BD—B

KRAFT PULP

Husum: Bear Brand

Munksund: Prime Kraft

Korsnas: Two Stars

Write or wire us for samples and quotations!

PAGEL HORTON & CO., INC.

347 MADISON AVENUE
NEW YORK CITY

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Bolton, Ga.—The National Paper Company, 334 Simpson street, N. W., Atlanta, Ga., has approved plans for a new addition to its mill at Bolton, to be one-story, reported to cost about $20,000, with equipment. General contract has been let to W. P. Francis, 201 Luckie street, N. W., Bolton, and superstructure will be placed under way at once.

Weehawken, N. J.—Palm Fechteler & Co., 85 Maple street, Weehawken, manufacturer of decalcomania transfers and kindred paper products, has awarded a general building contract to Curtis & Mink, Inc., 11 Park Place, New York, for a new addition to plant, to be three-story, reinforced-concrete, reported to cost about $85,000, with equipment. Plans have been filed, and work will be placed in progress at once.

Paterson, N. J.—The Reliable Paper Box Manufacturing Company, Inc., care of Samuel Starr, 22 California avenue, Paterson, recently organized by Mr. Starr and associates, with capital of $50,000, is said to be planning the early operation of local plant for the manufacture of paper boxes and containers. Benjamin Meltzer, Paterson, is also interested in new organization.

Appleton, Wis.—Fire, August 25, damaged a portion of the No. 2 mill of the Fox River Paper Company. An official estimate of loss has not been announced. The damage will be replaced.

Monroe, Mich.—The Consolidated Paper Company has awarded a general contract to the W. H. Knapp Company, Dixie Highway, Monroe, for the construction of proposed new addition to mill No. 3, recently referred to in these columns, to be one-story, brick and steel, estimated to cost about $50,000. It will be used primarily for storage and distributing service. Erection will be started immediately. H. Lee Rauch is general manager.

Easton, Pa.—The Individual Drinking Cup Company, Easton, has given a general building contract to R. T. & C. D. Stewart, Inc., Easton, for its proposed new plant unit, and for which ground will be broken at once. It will be three-story, 80x100 feet, brick and steel, equipped for the manufacture of pressed paper goods, estimated to cost about $100,000. The Ballinger Company, Twelfth and Chestnut streets, Philadelphia, is architect and engineer.

Hartsville, S. C.—The Sonoco Products Company, Hartsville, manufacturer of paper goods, cones, etc., has approved plans for the construction of a new addition to plant for considerable increase in present output. It will be three-story and basement, 80x92 feet, reported to cost approximately $75,000, with equipment. General building contract has been awarded to the A. K. Adams Company, Plum street, N. W., Atlanta, Ga., and work on superstructure will soon begin. As lately noted in these columns, the Forney Fibre Company, Jersey City, N. J., a subsidiary organization of the Sonoco Company, is also carrying out an expansion program, in connection with the removal of its plant to property recently acquired on West Front street, Plainfield, N. J., a former plant unit of the American Motors Corporation, which has been remodeled and modernized by the new owner; equipment is being provided for increased output over former plant at Jersey City, and a larger working force will be employed. The company has disposed of its factory at Jersey City.

Savannah, Ga.—The Certain-Teed Products Corporation, 100 East Forty-second street, New York, manufacturer of paper roofing, building papers, and kindred products, is organizing a subsidiary company to be known as the Southern Building Products Corporation, to establish and operate a plant at Savannah. Plans for initial factory unit are being perfected and production will be placed under way at an early date; in addition to products noted, the new mill will be given over to the manufacture of paper board products. The new organization will be represented by Remer L. Denmark, Savannah Fire Insurance Building, Savannah.

Minneapolis, Minn.—Fire, August 28, destroyed a portion of the storage and distributing plant of the Pioneer Paper Stock Company, with loss reported at about $17,000. It is understood that the loss will be replaced at an early date.

Pensacola, Fla.—A project is under way for the establishment of a pulp and paper mill in this vicinity, and a committee of citizens, headed by A. C. Blount, chairman, has been formed to conclude negotiations with a company in New England, name temporarily withheld, which proposes to develop an extensive branch plant at this place. The citizens committee has raised a fund of $40,000, for the purchase of a tract of about 70 acres of land on the Bayou Chico, as site for the mill, which will consist of a group of units, reported to cost more than $3,000,000. It is understood that the project will mature at an early date.

Cleveland, Ohio—The Spaulding Fibre Company, 124 St. Clair avenue, has awarded a general contract to J. Linder, 15615 West Delaware road, Lakewood, Ohio, for proposed new addition to plant for increased capacity. It will be one-story, 100x100 feet, brick and steel, estimated to cost about $60,000, with equipment. A portion of the structure will be given over to office service, and remainder equipped for general production. Headquarters of company are at Tonawanda, N. Y. McGarry & McGarry, 241 Euclid avenue, Cleveland, are architects.

Indianapolis, Ind.—The United States Corrugated Fibre Box Company, 1315 Martindale avenue, closed bids on September 5, for proposed new addition to plant, and will soon award general contract. It will be one and two-story, and basement, aggregating about 103,000 square feet of floor space, reported to cost close to $200,000, with equipment. A list of machinery to be installed has been arranged. Charles E. Bacon, Odd Fellows Building, Indianapolis, is architect. H. J. Lacey is president.

Houston, Tex.—The Texas Fibres Company, recently organized by W. G. Morrison, 505 Branard street, Houston, and associates, with capital of $600,000, is said to be planning the operation of plant for the manufacture of fiber products. It is understood that local site will be selected.

Harpers Ferry, W. Va.—The Harpers Ferry Paper Company and Shenandoah Pulp Company, affiliated organizations, William H. Savery, president and manager, has concluded negotiations with the Insull interests, headed by Samuel Insull, president of the Commonwealth Edison Company, 72 West Adams street,

▲ *This is the Fritz* ▲

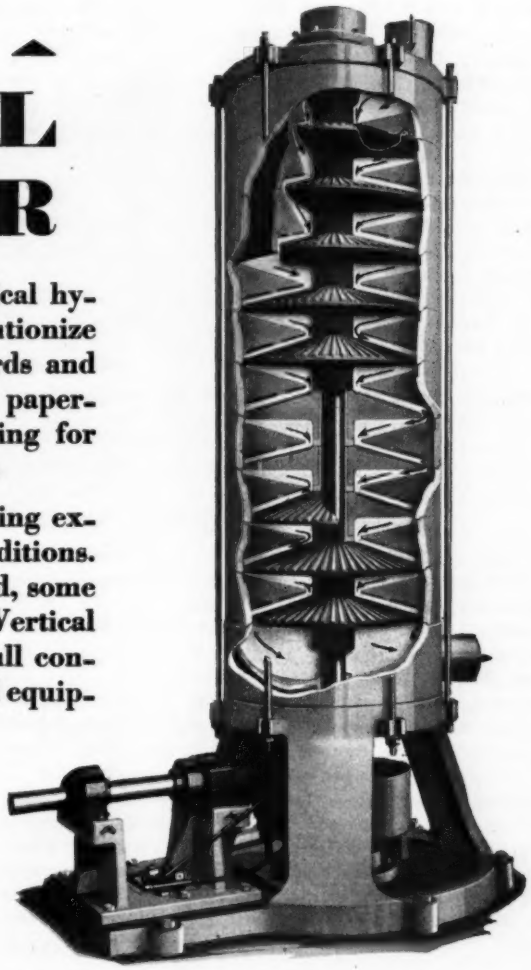
VERTICAL HYDRATOR

Rumors of the development of a vertical hydrator, a machine destined to revolutionize present refining and hydrating standards and constituting a major improvement in paper-making equipment, have been circulating for several months. *These rumors are true.*

This new machine has been undergoing exhaustive tests under actual working conditions. Comparative figures have been compiled, some of them have been disclosed. The Fritz Vertical Hydrator is now offered for sale with full confidence in its ultimate destiny as standard equipment in all progressive mills, marking a definite step forward in the science of paper making.

Efficiency in operation, economy, ultra-speed, and the highest standards of refining and hydration, accentuated beyond the hope of any other type of beater, are proven and provable attributes of the Fritz Hydrator.

The Hydrator is the result of a lifetime study of paper making methods and machinery. It is the result of a definite conclusion that in this step of the process the paper is born, for better or for worse. It is desired to present to the trade full information about this revolutionary step in paper manufacture, and to this end correspondence is invited.



The Hydrator consists of ten discs mounted on a vertical shaft and running opposite ten stationary discs mounted on the inside wall of the cylinder. The movable discs have 59 tapering bars 9 inches long. The stationary plates have 52 similar bars. The discs travel at a speed of 300 R. P. M. The pulp enters at the top, emerges at the bottom in a continuous stream. The action, which is adjustable, is entirely a brushing one. No fibres are cut.

The floor space is about 7 feet by 4, and the hydrator stands 12 feet high. It is constructed of either iron and steel or bronze for hard, constant use with continuity of production paramount. It is noiseless, requires no attention when in operation.

Fully covered by patents and patents pending in U. S. and foreign countries

VERTICAL HYDRATOR COMPANY

Pulp and Paper Mill Machinery and Supplies

***General Offices:* Tribune Building • Chicago, Illinois**

"Hydration", a booklet of scientific facts by an expert, is in preparation. Your request will assure you an early copy.

Chicago, Ill., and affiliated utility organizations, for the sale of its water power properties at the junction of the Shenandoah and Potomac rivers, near Harpers Ferry, for a reported consideration of close to $1,000,000. The sites will be urged for hydroelectric power development, it is said, by the purchasing organizations.

Los Angeles, Calif.—The Bates Valve Bag Corporation, 35 East Wacker drive, Chicago, Ill., is completing work on its new plant at Los Angeles, and expects to place the unit in service within a few weeks. The plant will have an initial output of about 300,000 bags per day, and will represent an investment of approximately $250,000. Facilities have been arranged for a bag storage division with a capacity of 5,000,000 bags at one time. A working force of close to 150 persons will be employed. This will make the fourteenth plant of the company in different parts of the country, and two new plants are now projected in the Eastern district. The company is a subsidiary of the St. Regis Paper Company, Watertown, N. Y., which is now arranging a financing program to total about 7,500,000 shares of stock, a portion of the fund to be used for expansion.

Philadelphia, Pa.—The Hemingway Company, 828 North Hancock street, paper stocks, has filed plans for extensions and improvements in storage and distributing plant, reported to cost about $14,000. General building contract has been let to the A. Raymond Raff Company, 1635 Thompson street, Philadelphia.

New Companies, Etc.

New York, N. Y.—The Hexagon Box Corporation has been incorporated with 100 shares of stock, no par value, capitalization, to manufacture and deal in paper boxes and containers. The incorporators are David Weiner and George A. Kruger, 1851 Eighty-fifth street, Brooklyn.

Woonsocket, R. I.—The United Paper Company, Inc., has been incorporated with a capital of $150,000, to manufacture and deal in paper bags, boxes and other containers. The incorporators are I. I. and Abraham E. Goldstein, 527 Wood avenue, Woonsocket. Last noted heads the company.

Templeton, Mass.—The A. L. Adams Paper Company, Baldwinsville, has been incorporated with a capital of 50,000 shares of stock, no par value, to manufacture crepe and other paper stocks. The new company will take over and succeed to the organization of same name, with mill at Baldwinsville, heretofore operated with Alva L. Adams as proprietor, who will be president of the new corporation; Catherine J. Adams, Pleasant street, Templeton, is treasurer.

Bates Valve Bag Completes Plant

OSWEGO, N. Y., September 3, 1929.—The new plant of the Bates Valve Bag Corporation in this city has been practically completed and transfer of the machinery from the Chicago plant will be started immediately. Part of the Oswego plant will be in operation early in September and within a few weeks all equipment of the Chicago plant will have been moved to this city. The Chicago plant is to be closed and with the change a number of machinists and other employees will move to this city. The new factory is located west of the Taggart-Oswego Paper and Bag Corporation and will be one of the largest machine shops in this part of the country. It will be devoted to the manufacture of machinery used in filling paper bags used in cement and other industries. The Bates Corporation holdings were acquired by the Carlisle organization last spring. In connection with the new plant there will be engineering and drafting rooms, accounting offices and office of the executive branch.

The new plant will be under supervision of Carl Hartman, who has been identified with the Bates Company for a number of years. His headquarters will be located at the general offices of the St. Regis Paper Company in New York. During the past week an inspection of the new structure was made by Carl Martin, treasurer of the St. Regis Company, and others identified with the Carlisle Organization.

M. B. Peacock Transferred to Chicago

MARINETTE, Wis., September 9, 1929.—M. B. Peacock, head of the order and planning department of the mills of the Marinette & Menominee Paper Company and the Victory Bag and Paper Company, will be transferred to Chicago to become assistant to the western sales manager of the Continental Paper and Bag Corporation. The Chicago sales office has supervision over all sales offices in the middle west.

The management of the mills gave a dinner in Mr. Peacock's honor at the Riverside Country Club on Tuesday evening, September 3, covers being laid for twenty-four guests. Upon completion of the dinner, the entire group consisting of executives, department heads and direct associates, repaired to the offices of the paper mill where an informal meeting was held. At this gathering, Mr. Peacock was presented with a traveling bag, the gift of his business associates.

Before assuming his new duties in the Chicago office, Mr. Peacock will spend two weeks at the executive offices in New York under the supervision of the manager of sales. Thereupon, he goes direct to Chicago, to take up his new work.

Harry E. Munson has been selected to fill the position vacated by Mr. Peacock. He will have charge of the order and planning department of the paper mills and the bag factory. Harvey S. Borman will be his assistant in charge of the paper departments, and Harold P. Sunstrom, his assistant in charge of the bag department.

Peter Vanderberg will continue to be in charge of the planning department at the Victory factory, with Alfred Villeneauve as his assistant. Francis Burns is being transferred to the printing department, and Herman Kronka of the laboratory will be in the order department at the main office.

Ticket Completed for Brotherhood Election

[FROM OUR REGULAR CORRESPONDENT]

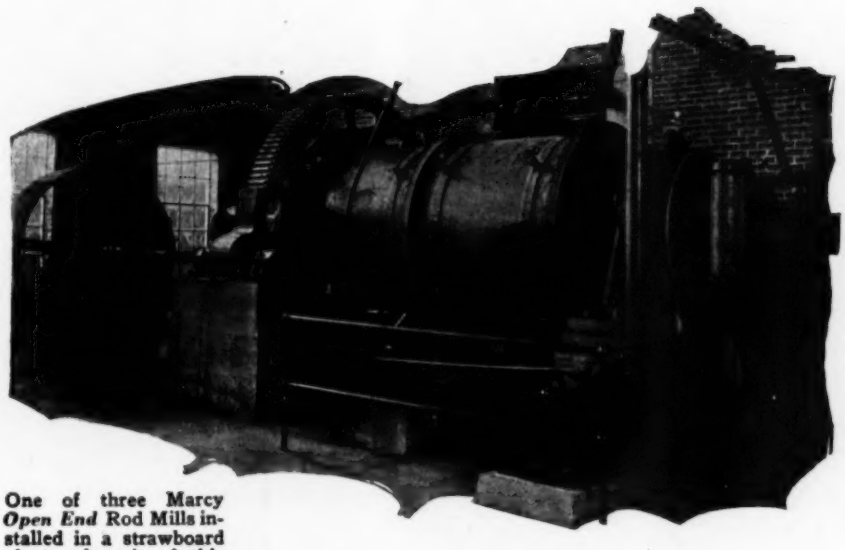
ALBANY, N. Y., September 9, 1929.—The complete ticket to be submitted to members of the International Brotherhood of Papermakers in this country and Canada at the election during the first two weeks in October has been designated as follows:

For president, M. J. Burns, Jeremiah T. Carey, W. R. Smith, all of Albany; treasurer, J. H. Noonan, of Glens Falls, Archie Hook, of Chicago; secretary, Arthur Huggins, of Holyoke; auditor, David Larner, of North Tonawanda; first vice president, Frank P. Barry, of Albany; second vice president, Charles Murtaugh, of Iroquois Falls, Ont., George J. Schneider, of Appleton, Wis.; third vice president, Joseph Addy, of Troy; fourth vice president, A. F. McLeod, Three Rivers, P. Q.; fifth vice president, John W. Bailey, of Holyoke; sixth vice president, Oscar Benoit, Shawinigan Falls, Augene Cote, Iroquois Falls, E. O. Kelly, Sault Ste. Marie, E. B. Lambton, Gouverneur.

The organization plans to mail ballots to the respective locals the second week in September. From now until October there will be plenty of campaigning particularly by those seeking the presidency. Mr. Burns has started a tour of the west while Mr. Carey is still campaigning in the Province of Quebec. During the past week Secretary Huggins delivered the principal Labor Dry address at a big celebration staged at Woodland, Maine.

Marvellum Co. Installs New Machine

HOLYOKE, Mass., September 10, 1929.—The Marvellum Company of this city has installed another machine for the marbling effects that characterize its papers. The new machine is much larger than the old one, printing sheets up to 46 inches wide and will supplement the work of the other machine. This method of printing originally was confined to linings, end sheets, envelope linings, box cover papers, card mounts and like. It is being extended to work on silks and other cloths. The concern is now using nearly all the space in the former Whitmore Manufacturing Company's building.



One of three Marcy *Open End* Rod Mills installed in a strawboard plant. A unit of this size will do the work of several beaters.

Capacity Assured for Rod Mill Beating

LET'S talk about capacity of rod mills. Capacity must be such as to make it a distinct advantage to use one rod mill unit as against a battery of batch beaters. Also, the estimated capacity must be at least attained, if not exceeded.

Assured capacity is one feature of the Marcy *Open End* Rod Mill. Without exception, all the units installed have fulfilled capacity requirements.

This emphasizes not only the soundness of the mill design itself but the knowledge Marcy men have of beating requirements and the conservativeness of their recommendations.

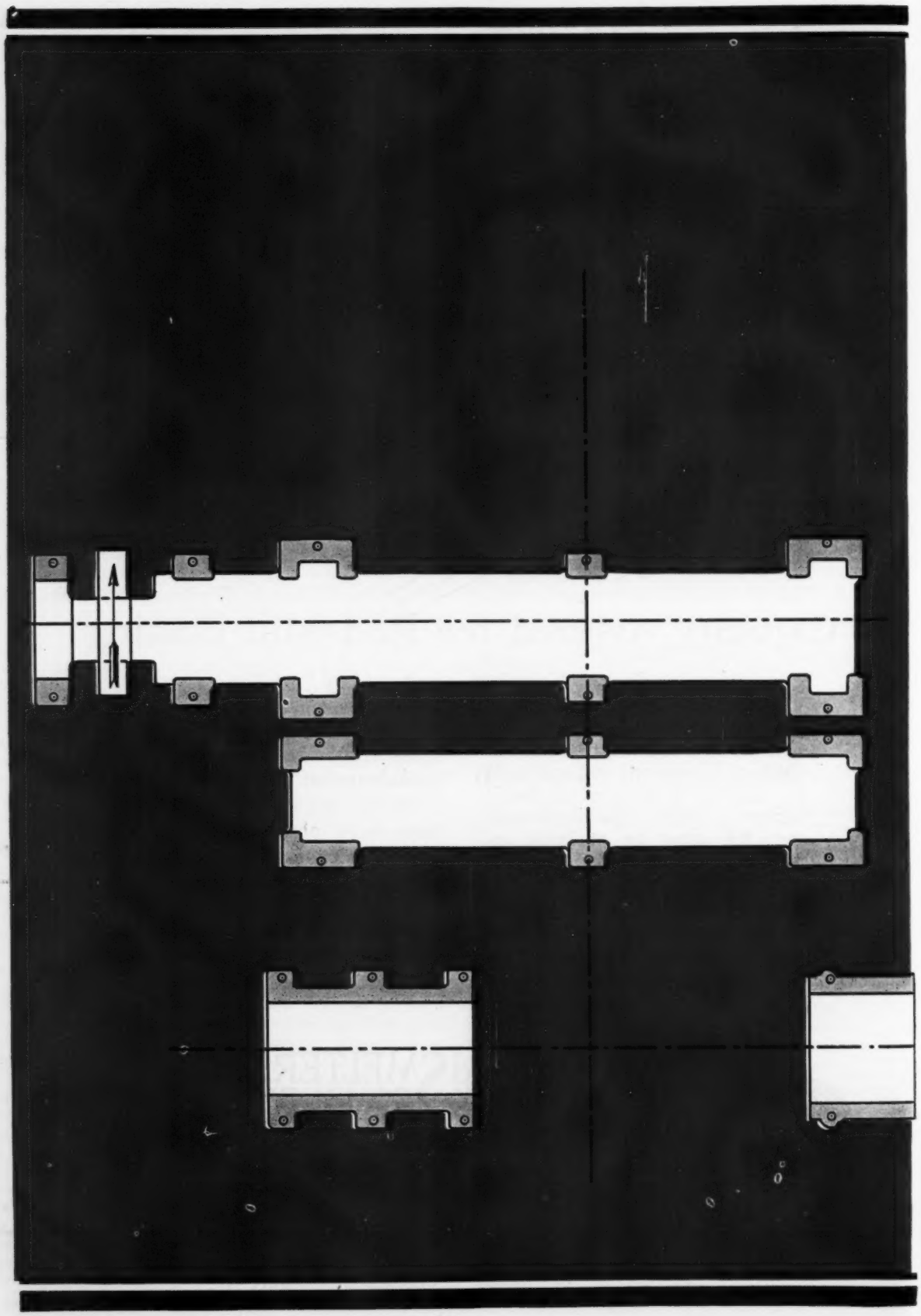
The capacity you want will be assured when you beat with the Marcy *Open End* Rod Mill.

The MINE and SMELTER SUPPLY COMPANY

NEW YORK DENVER

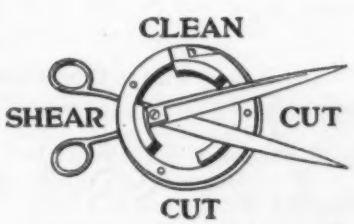
Licensee under the Marcy Rod Mill Patents

Manufactured in Canada by William Hamilton, Limited
Peterborough, Ontario



Alignment

EVERY Langston Slitter rests on a heavy bed-plate, making the machine a self-contained unit. The entire machine is built up, part by part, on this substantial foundation. The side frames are in perfect alignment. You get a well-balanced, smooth-running unit with practically no vibration, thus reducing wear and tear. Built in this way, Langston Slitters operate over long periods with very low maintenance and repair costs. An Eastern Paper Mill reports: "Good design and the use of roller and ball bearings promise a useful life of 20 years for our Langston Slitter. There have been no repairs to date and no shutdowns." Our Engineering staff will gladly advise you on the best type of slitter for your work.



SAMUEL M. LANGSTON COMPANY, CAMDEN, N. J.

LANGSTON SLITTERS

New York Trade Jottings

M. W. Heddon, of the Racquette River Paper Company, was a New York visitor last week.

* * *

George D. Bearce, of the Manufacturing Department of the International Paper Company, New York, has been made manager of the new Dalhousie mill, New Brunswick.

* * *

W. N. Baker, formerly engineer with the International Paper Company, New York, at their Glens Falls plant, has been appointed manager of the Pyrites, New York, mill of the company.

* * *

K. J. Bergstrom, of A/B Svenska Flaktfabriken, of Stockholm, Sweden, was a visitor to the TAPPI offices at 18 East 41st street, New York, last week. Mr. Bergstrom has a scholarship from the Royal Technical College of Sweden to study thermotechnology in the United States and Canada.

* * *

The New York Division of the Salesmen's Association of the Paper Industry resumed its regular weekly luncheons and meetings last Monday at the Canadian Club, Hotel Belmont, New York. There was an excellent attendance and plans for forthcoming meetings were freely discussed and formulated by those present.

* * *

G. A. Ware, of the News Print Service Bureau, 342 Madison Avenue, New York, plans to attend the meeting of Cost Accountants and Engineers of Bureau members in the Lake States, which will be held at the Marinette Hotel, Marinette, Wis., on Friday, September 20, in connection with the Northwestern Division of the Superintendent's Association.

* * *

Members of the pulp and paper industry will be interested to learn that the National Exposition of Power and Mechanical Engineering will be held at the Grand Central Palace, New York, during the week of December 2. Coincident with the Power Show, the American Society of Mechanical Engineers will hold its annual meeting in the City.

* * *

The report of the Albany Perforated Wrapping Paper Company for the fiscal year ended June 30, 1929, shows net profit of $95,610 after depreciation, interest and other charges, equivalent to 61 cents a share on 156,000 no par shares of common stock. This compares with $187,811, or 70 cents a common share after deduction of preferred dividends in the previous year.

Program for Cost Convention

The following is the complete program for the fall convention of the Cost Association of the Paper Industry at the Hotel Wausau, Wausau, Wis., September 19-21:—

THURSDAY, SEPTEMBER 19, 1929

9:00-9:30 A. M.—Registration.
9:30 A. M.—Address of Welcome, by C. A. Jasperson, Secretary, Nekoosa-Edwards Paper Co., Inc.
9:50 A. M.—Roll Call.
10:00 A. M.—"Use of Standards in Paper Mill Accounting", by Charles Passmore, Frazer & Torbet, Certified Public Accountants, Chicago, Ill.
10:45 A. M.—Discussion on Mr. Passmore's Address.
11:00 A. M.—"Prophets and Profits", by Thomas J. Burke.
11:45 A. M.—Discussion on Mr. Burke's Address.
12:30 P. M.—Luncheon.
2:00 P. M.—"Should Depreciation Rates be Standardized in the Pulp and Paper Industry?" by Frank W. Jackson, American Appraisal Co., Milwaukee, Wis.
2:45 P. M.—Discussion on Mr. Jackson's Address.
3:00 P. M.—"The Setting of Standards in the Paper Industry", by J. P. Hagenauer, Industrial Engineer, L. V. Estes, Inc., Chicago, Ill.
3:45 P. M.—Discussion on Mr. Hagenauer's Address.
4:00 P. M.—"Technical Control in the Paper Mill", by G. F. Enderlein, Chief Chemist, Mosinee Paper Mills, Mosinee, Wis.
4:45 P. M.—Discussion on Mr. Enderlein's Address.
5:00 P. M.—Adjournment.
7:00 P. M.—Dinner and Dance.
Chairman, A. M. Van Douser, Marathon Paper Mills, Inc.

FRIDAY, SEPTEMBER 20, 1929

9:00 A. M.—Open Forum—"Cost of Casing".
9:30 A. M.—"Financing in Pulp and Paper Mills", by Newton V. Wagner, Arthur Anderson & Company, Certified Public Accountants, Chicago, Ill.
10:15 A. M.—Discussion on Mr. Wagner's Address.
10:30 A. M.—"An Executive Viewpoint of the Cost Accountant's Job in the Paper Industry", by Joseph M. Conway, President and General Manager, Hoberg Paper & Fibre Company.
11:00 A. M.—"Rated Machine Capacities and How They Are Compiled", by C. R. Whipple, Beloit Iron Works, Beloit, Wis.
11:45 A. M.—Discussion on Mr. Whipple's Address.
12:00 Noon—Adjournment.
1:00 P. M.—Group Luncheons.

Arrangements have been made for visits to the Local Mills for this Afternoon. Please advise secretary-treasurer promptly after arrival, which mill you desire to visit at this time.

SATURDAY, SEPTEMBER 21, 1929

9:00 A. M.—"Pulpwood Costs as Affected by Regional Competition", by Charles W. Boyce, Secretary Woodlands Section and Acting Secretary American Paper & Pulp Association.
9:45 A. M.—Discussion on Mr. Boyce's Address.
10:00 A. M.—"Accounting for Selling and Distribution Expenses", by James L. Palmer, Associate Professor of Marketing, The School of Commerce and Administration, University of Chicago.
10:45 A. M.—Discussion on Professor Palmer's Address.
11:00 A. M.—Business Meeting.
Election of Officers.
Secretary-Treasurer's Report.
12:00 Noon—Adjournment.
1:00 P. M.—Luncheon.

PROGRAM FOR LADIES

THURSDAY, SEPTEMBER 19, 1929

1:00 P. M.—Luncheon.
2:30 P. M.—Moving Pictures.
7:00 P. M.—Dinner and Dance.

FRIDAY, SEPTEMBER 20, 1929

Morning—Golf.
1:00 P. M.—Luncheon.
2:00 P. M.—Choice of Bridge Party or Auto Trip to Eau Claire Dells.
6:00 P. M.—Dinner.
7:00 P. M.—Moving Pictures.

SATURDAY, SEPTEMBER 21, 1929

Morning—Golf.
1:00 P. M.—Luncheon.

CONVENTION COMMITTEE

A. M. Van Douser, Marathon Paper Mills (Chairman); Miss I. M. Carney, Tomahawk Kraft Paper Company; H. Deyo, Nekoosa-Edwards Paper Co., Inc.; F. Shemanski, Whiting-Plover Paper Company.

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Modernizing The Mill and Power Plant

Variable Speed Transmission Applications

Two years ago, the statement was made in these columns that compact, highly efficient, variable speed transmissions have probably done more to bring about the truly remarkable strides made in the paper industry during recent years than any other single mechanical development or innovation. At the same time, the three distinctive and quite dissimilar types of these mechanisms, the mechanical, hydraulic and planetary varieties, were described briefly and instances cited where each has effected substantial economies in the cost of production.

While the fact that one of these transmissions, notably the mechanical variety unit at the plant of the National Asbestos and Manufacturing Company, Jersey City, N. J., has been in continuous 24-hour operation for nearly thirty years, having been installed in 1901, might be looked upon rather as a striking example of the necessity of such devices in certain paper making operations, than as any indication of the worth of such mechanisms in modernizing the mill and power plant, such is far from being the case. This particular variety of variable speed transmission has kept in step with developments in paper making, much has been done in respect to refinements in its sensitive control and regulation and its use has been extended to virtually every phase of the speed control so essential in pulp and paper making processes, in order to insure the quality and quantity standards set by present day requirements.

The reception accorded the hydraulic variety of variable speed transmission, a mechanism quite unknown in the paper making industry only five years ago, is a further indication of the worth of sensitive speed control and regulation in modernizing the plant. In such brief period, not only has this particular variety of variable speed transmission proved its value in paper making activities, but up to the commencement of the current year some thirty-five prominent mills had installed a total of 103 such transmissions. Furthermore, to date during 1929 twenty mills have ordered hydraulic variable speed transmissions and in 60 per cent of the instances the requisitions have been repeat orders.

These trade statistics are cited simply to show that many mills still have much to learn regarding the value of modern variable speed transmissions in increasing production and decreasing operating costs, both for paper machine drives and for what may be termed paper mill auxiliaries. In the case of large high-speed news print machines, it is true, much progress has been consummated by equipping such machines with electrical sectional drives, on account of the large power to be transmitted and the high speed at which it is necessary to drive the machines.

The first cost of the electrical sectional drive, however, is usually considered prohibitive for the smaller and slower machines, *i. e.*, for the great majority of paper machines employing belt, Marshall train or rope drives. In this larger field, marked improvements have also been made, of course, through the adoption of heavier shafting, anti-friction bearings and modern speed reducers, but if in addition the essential speed control is sensitively effected by means of a modern variable speed transmission unit a reliable, highly efficient machine drive is secured with an infinite number of speeds easily obtained and accurately maintained.

This is true whether mechanical, hydraulic or planetary varieties of variable speed transmissions are employed, and is by no means confined to the drives for the smaller and slower machines. It is important, in any case, when selecting the main variable speed drive, to make provisions for a greater range of speeds, both up and down, than may be necessary for immediate normal requirements. As paper making equipment is being continually improved, the paper maker is finding it quite feasible to speed up his machines, and a drive should be provided which will have sufficient range to take care of such possible increases. Also, it is frequently profitable for the mill to be able to take on an order for a heavier paper than is usually produced, and the drive should have sufficient range to make the necessarily lower machine speeds economically feasible.

As trade competition has increased, moreover, it has been necessary for the printers and users of papers to demand better sheets, greater uniformity in their physical properties and reduced prices. This calls for the use of the best materials available by the paper mill, but unless the paper machine, including the drive, is always in good condition and the most satisfactory operating conditions can be maintained, the paper maker will find that his sheet will vary in quality and that imperfections cannot be prevented.

That there is one best and proper speed for every weight of sheet is generally recognized, there is no doubt, but this speed will vary from time to time with changes in the quality of the stock, humidity of the room, dryer temperatures and other conditions over which the mill can exercise only limited control. With a modern variable speed transmission drive, it is possible for the machine operator to vary machine speeds readily as other conditions change and he has the opportunity to compensate in such manner for the variations. The variable speed transmission control provided should be extremely sensitive, however, and there should be no steps in speed variation, simply a smooth speed regulation, unfaltering acceleration or speed reduction. While the range of speed change need be no more than ample, both up and down, an infinite number of speeds should be obtainable between the set limits.

Applications of Hydraulic Variable Speed Transmissions

As the discussion on variable speed transmissions which appeared in these pages May 17, 1928, featured only transmissions of the mechanical variety and since the citation of specific applications proves one of the most effective plans for indicating ways and means of modernizing the plant, it might be well to cite here a few typical examples of hydraulic variable speed transmissions applications. Focussing attention upon installations of this particular variety of transmission, as when featuring installations of transmissions of the mechanical variety, should not be interpreted, however, in the nature of recommendations or

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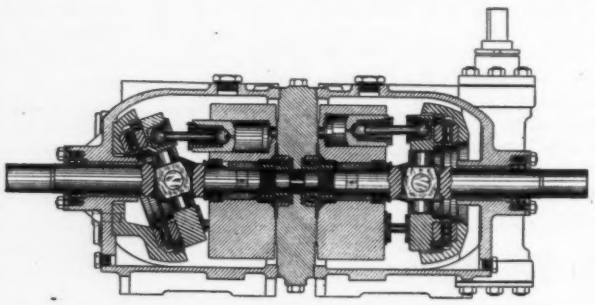
endorsement of the particular type of mechanism. On the contrary, the citations, in view of the highly satisfactory service rendered by other varieties of approved variable speed transmissions, is a clear indication that there are at present many mills which have yet to appreciate in full the fact that quality is a highly important factor in profitable mill operation.

Paper machine drives embodying the hydraulic type of variable speed transmission control are of two general varieties, that in which the pump and the hydraulic motor units are arranged in a single compact assemblage and that in which the pump and motor units are separated, and connected by lines of suitable piping. The former arrangement is employed for the variable speed line of the 112-inch Fourdrinier at the mill of the Byron-Weston Company, Dalton, Mass., and for the variable speed line of the 108-inch, 5-cylinder board machine at the John Strange Paper Company, Menasha, Wis., to mention only two.

The arrangement with the two functioning units separated is employed at the Strathmore Paper Company, Woronoco, Mass., for its 106-inch Fourdriner; at the Southworth Company, Mittineague, Mass., for the 80-inch Fourdrinier employed for making a wide variety of papers, bonds, linens, ledgers, onion skins and others; and at C. H. Dexter and Sons, Windsor Locks, Conn., for two 72-inch and two 96-inch Fourdriniers. In the latter installation, the motor unit section of the transmission is located above the paper machine, conserving valuable floor space,



Courtesy: The Waterbury Tool Co.

FIG. 1.

Sectional view of hydraulic variable speed transmission (compact assemblage type). Left end—Hydraulic motor, variable speed unit, section. Right end—Pump, constant speed unit, section.

while the pump unit is situated in an out-of-the-way corner and occupies very little space.

As a winder drive, these transmissions are deservedly popular, for it is highly important that a winder drive afford a range of speed from the creeping, necessary for the threading-in operation, up to the maximum, which should be high enough to allow the winder to keep well in the lead of the paper machine. At the New London, Conn., mill of the Robert Gair Company, the three 120-inch winders are equipped with such drives, a speed range of from 0 to 900 feet per minute being provided. The 126-inch tissue winder at the Fort Howard Paper Company, Green Bay, Wis., is provided with a similar drive having a speed range of from 0 to 1,600 feet per minute, while the variable speed transmission drive on a 166-inch newsprint winder at the mill of the Escanaba Paper Company, Escanaba, Wis., has a speed range of from 0 to 2,150 feet per minute.

With such winder drives, a threading-in speed can be obtained so low that movement can scarcely be detected, if found necessary, and the maximum operating speed can be attained as rapidly as desired and with smooth acceleration. This is a very important advantage from the point of view of maintenance, for with such speed control there is no need for a friction clutch or slip belt, dependance on which invariably causes a more or less jerking motion which is liable to break the sheet and prove dangerous to the machine operator, no matter how great the care taken to secure a smooth speeding-up of machine. With a modern variable speed transmission winder drive, the clutch and the slip belt can be discarded.

The ability to slow down the winder should a weak spot approach is also highly desirable, for such control will materially reduce lost time and waste resulting from "brokes." There is a reduction in the number of splices per finished roll, resulting in considerable saving to the converter or printer, thereby creating a quality demand for paper produced at the mill. On a machine making specialties, it is very desirable to be able to operate the winder, not only at different speeds, but at the most advantageous speed for the machine output under whatever operating conditions may pertain.

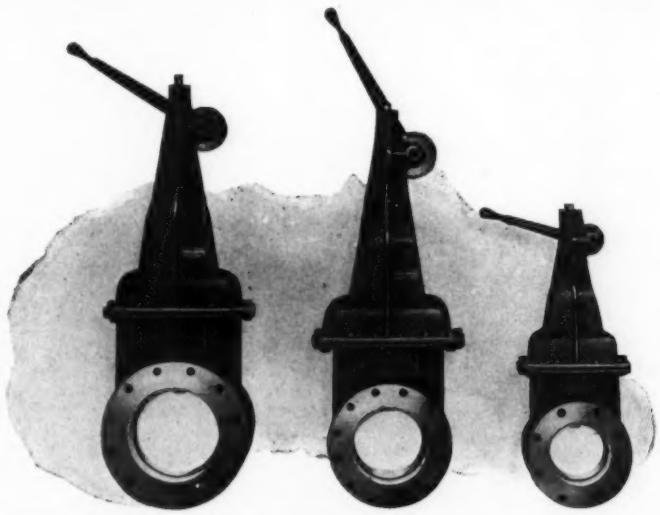
When employing hydraulic variable speed transmission drives for winders there is usually sufficient space back of the winder to install the type of transmission where the pump and motor unit sections are grouped together, but if the space available is too restricted, only the motor unit section need be installed at the winder, the pump unit being relegated to a more convenient location, in the basement or an out-of-the-way corner. The pump unit may be driven by its own motor, several such units may be driven from a single motor or the pump unit may be driven from any existing constant speed shaft which may be used for driving other equipment.

These advantages of variable speed transmission winder drives apply equally to calender drives similarly controlled and for the latter service the hydraulic type of variable speed transmission is particularly well suited. This is in connection with its ability to stop the calender instantly by simply throwing a by-pass valve introduced between the pump and motor unit sections. Unless the calender is stopped instantly, the calender rolls will become marked and subsequent sheets will be spoiled, making it necessary on other types of calender drives to depend upon the operation of a friction clutch of the electric or some mechanical variety for the necessary stoppage.

An accurate and positive variable speed transmission drive is also essential for the satisfactory control of either the cutter on the end of the paper machine or the dry sheet cutter in the finishing room, for unless any desired length of sheet can be cut closely to the finished length, a considerable margin has to be left for trimming and this margin frequently constitutes an important item of waste. With the approved modern variable speed transmission cutter drive, the exact setting for either the knife or the feed rolls for effecting the control where the trim is negligible is easily obtained. In fact, the control may even be fitted with a dial calibrated for the exact length of sheet so that a change to any desired setting is instantly and readily effected.

The drive of one or more of the presses, sometimes including the Fourdrinier wire or cylinder molds, constitutes a complicated problem quite aside from the actual driving of the paper machine, and one which virtually necessitates the employment of modern variable speed transmissions if economical production is to be realized. The speed of the press should be varied so as to compensate for a changing diameter of rolls due to wear and grinding, for instance. Then, where a machine is making crepe papers it is sometimes necessary to drive the entire wet end and the first dryer section at a speed as much as 15 to 20 per cent faster than the balance of the paper machine. The same machine may at times make a flat sheet where the speed of all sections is very nearly the same, or on some grades of paper the wet end may actually have to be run at a lower speed than the rest of the machine, on account of the stretch of the sheet.

Sectional drives incorporating variable speed transmissions have also proved highly successful and eminently satisfactory. For example, six hydraulic variable speed transmissions replace the customary back line on an 86-inch machine at the mill of the Kieth Paper Company, Turners Falls, Mass. The six pump unit



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Instant control is a big advantage of this Gate Valve. No time is lost in operation.

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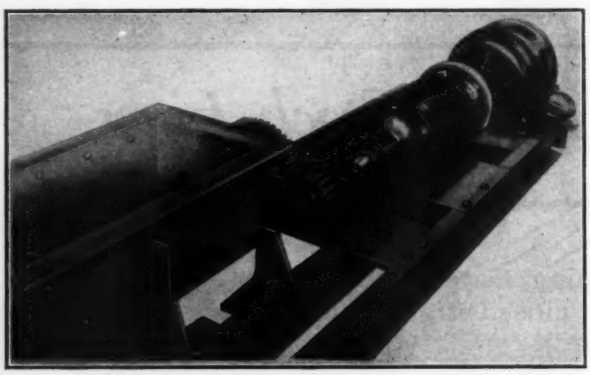
sections are driven by a single electric motor, the units, three attached in series to either end of the actuating electric power unit, being direct connected in line on a common bedplate, insuring the identical constant speed for all pump unit sections, while the motor unit sections of the transmissions drive the individual sections of the paper machine through compact, efficient herringbone speed reducers. The speed regulation of the individual section drives is effected by so-called electric control heads, and is so sensitive and accurate that the paper machine is being successfully applied to the making of the highest grade bond, linen and ledger papers in the economical production of which a speed variation range of 10 to 1 is required.

An eleven section hydraulic variable speed transmission drive is also being successfully employed for the operation of a coating machine where the service is particularly severe and the control required is extremely exacting. The speed has to be varied over a wide range and accurately controlled between sections in order to compensate for changes in temperature and humidity and for the stretch and shrinkage of the sheet.

Where and Why to Employ Variable Speed Transmissions

While the foregoing applications of variable speed transmissions have dealt with installations of units of the hydraulic type, they



Courtesy: Stephens-Adamson Mfg. Co.

FIG. 2.

Planetary type variable speed transmission driving screw feeder. Speed ratio: 8 to 1. Variable speed range: 5 to 1.

do not by any means cover all the eminently satisfactory adaptations of these efficient and to the paper making industry comparatively new transmissions, nor are they any indication that similar services cannot be as well discharged by other varieties of transmissions, those of the mechanical and planetary types. In fact, conditions and considerations which obviously cannot be intelligently discussed without knowing far more in regard to local conditions and requirements and even matters of expediency and policy than can be taken up in a general article of this character are involved before anything in the line of recommendations as to wise selection between the different varieties of transmission could be ventured.

The uses to which approved types of variable speed transmissions can be profitably applied in the paper mill and its power plant entail almost every operation involved in the transmission of power, almost any power device where sensitive and positive speed control is beneficial and many in the power plant as well. In this connection and as indicative of the influence exerted by such devices in modernizing the plant, the accompanying table listing the where and why to employ variable speed transmissions in mill fabrication and processing and in the paper container industry should be quite illuminating to the mill as yet failing to capitalize to the utmost upon quality and quantity attainments quite possible of realization with substantial profit. These particular applications are advocated by one of the oldest and best

PROFITABLE APPLICATIONS OF VARIABLE SPEED TRANSMISSIONS

Type of Machine, etc.	Applications and Reasons for Use
In Fabrication and Processing Operations	
Cylinder and Fourdrinier Machines	Complete machine drive for the fabrication of paper from the beaters to the finished product. Speed must be varied for different grades and weights of paper, as well as temperature conditions, both external and within the steam cylinders of the machine.
Sectional Paper Machines	Dryer sections driven separately and variable speed transmissions used to synchronize the different sections and to compensate for shrinkage in the paper. Variable line shaft for paper machine driven by larger transmission.
Paper Winders and Rewinders	Transmission used to vary the speed for different weights and grades of paper. Sometimes used with automatic control, automatically to decrease the speed of the roll as it increases in diameter, thus holding constant peripheral paper speed.
Paper Cutters, Either Straight Knife or Rotary Fly Knife Type	When transmissions are used at end of paper machine, speed of knife is varied to cut different length sheets. When used separately, either the speed of the knife or of the feed rolls is varied.
Dryers	Transmissions used to vary speeds for different weights and grades of paper and according to amount of moisture to be removed.
Paper Coating Machines	For giving smooth glossy surface to paper, as well as special processing finishes. Speed varied for different weights and qualities of paper.
Paper Waxing Machine	Transmissions used on special machines for putting waterproof paraffine or glazed finish on paper, used for wrapping candy, butter, margarine, etc.
Embossing Rolls	Transmissions used for giving special embossed surface to paper. Usually used on cover stock, fancy effects, etc.
Special Machines	Transmissions used for processing paper, such as colored sheets or other fancy colored papers, used as linings and wrappers for candy boxes, hat boxes, etc.
Engine and Steam Turbine Governors	Transmissions used for the purpose of maintaining a constant governor speed, while the power unit speed may be varied.
Mechanical Filters	Transmission used to vary the speed of the filter, according to the consistency of the pulp or other material handled.
Saturating Machines	For saturating heavy paper or felt with waterproofing solution. Speed variation required dependent upon amount of saturation and grade and weight of paper.
Pasting Machine	For combining two or more sheets of flat board or paper, where sheets are required that are heavier than is practical to make in a single thickness.
Metering Systems	Transmissions are used for measuring and regulating the amount of sulphite, ground pulp, coloring, etc., delivered to the wet end of the paper making machine.
In Paper Container Production	
Corrugator and Single Facer	Transmissions required for machine corrugating straw board and pasting to it a sheet of paper in one operation, thus forming a single faced sheet of corrugated board.
Double Facer	Transmissions required for machine taking a single faced sheet of corrugated board and combining it with the second liner, forming a double faced sheet of corrugated board.
Slotter and Creaser	Transmissions required for machine slotting and creasing corrugated or flat board where the fold comes in making boxes.
Taping Machine	Transmissions used on machine used for putting the gummed tape on corners of boxes.
Box Lining Machine	Transmissions used for putting the white glazed or colored paper liner on flat board used in candy boxes, shoe boxes, etc.
Printing Presses, Special	Transmissions used for printing name and advertisements on corrugated or flat board boxes. Speeds varied for different sizes of boxes and for different forms.
Paper Cutters Feed Rolls	Same as in paper mills. Transmissions used for pinch rolls drawing paper from a roll and feeding it to the corrugator. Speed regulated automatically to maintain equal tension on paper at all times.
Spiral Tube Machines	Transmissions required for making paper mailing tubes. Speed varied for tubes of different diameter and according to the width of the strip of paper wound onto the tube.
Paper Bag Machines	Transmissions usually incorporated in machine for forming paper bags.
Bottomers	Transmissions for folding and cementing the bottom of paper bags.
Quadruple Stayers	Transmissions used for forming "set up" boxes. Speed variation required according to size and shape of box, as well as weight of material used.

Reeves Pulley Company, Columbus, Ind.

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development was the original contribution to the Paper Industry in water saving and consequent reduction of waste in pulp and paper mills.

These THREE recognized important contributions are DWARFED by the promises of Millspaugh's (VACUUM FORMING AUTOMATIC PAPER MAKING MACHINE) now announced for the first time in advertisements. The Company has just completed at large expense, a model paper mill to demonstrate this and still other inventions on which for years it has spent much time and large sums. Many important patented developments are incorporated in the machine. One worthy of note is the mounting of the dryers on Millspaugh's patent ANTI-FRICTION BEARINGS. Twenty dryers are DRIVEN BY THE DRYER FELTS, all but two dryer gears being omitted.

Another distinguishing feature is in the automatic carrying of the sheet through the presses through an entirely novel arrangement of the press part. There is no long wire as in the conventional Fourdrinier machine, no flat boxes, all table rolls are eliminated, fully three-quarters of the machine room space required for the usual wet end is saved. Wires are renewed in a few minutes. The machine is capable of running safely at twice the normal speed of the fastest machines of today. It has been demonstrated on this machine that many papers of different weights and grades may be made MUCH BETTER, MUCH FASTER, and MUCH CHEAPER. All leeches and barnacles of the conventional machine have been removed. The machine is now in daily production and is confidently expected to make history as other Millspaugh inventions have made. Further details will be furnished to those interested at the proper time.

It is realized from past experience in introducing new inventions that time may be required to convert a majority of the industry to this new machine and its related innovations. We have anticipated the march of progress by putting ourselves in position to meet present and immediate as well as future needs of the trade. Having present facilities, plant equipment and manufacturing methods superior to most existing companies for the production of Fourdrinier and press parts, with our processes easily applicable for the manufacture of dryers, insuring potential lower costs and higher quality, we are in position to manufacture complete papermaking equipment, also the rebuilding and modernizing of old machines.

The company recently secured exclusive licenses under THE NEW DARBY INVENTIONS for removable fourdrinier machines and wire replacing methods on all makes of existing fourdrinier machines. For a relatively small sum an existing machine may be fitted to put a new wire safely on to it from the aisle at the tending side in a shorter time than heretofore thought possible—AND WITHOUT CANTILEVERING OR REMOVING THE MACHINE OR DISRUPTING IT. Most existing machines by use of these new Darby inventions are quickly and cheaply converted into removable machines on which NO ROLLS ARE REMOVED from their journals and TIME FOR CHANGING ROLLS IS LESS than is credited to other methods of replacing wires. It is the paper manufacturer's option which method he prefers, either the removable type wherein the machine is moved into the wire, or the type in which the wire is slipped over the machine while it is still on its foundation. The one might be called a "step-in," the other a "slip-over." The cost is very small compared with present systems. Why pay more? Ask us for complete information.

We wish to emphasize that Millspaugh suction couch and suction press rolls are furnished for any make, size or type of machine. There is no reason whatever for any engineer or paper mill manager or superintendent not ordering Millspaugh suction rolls for fear that they will not be of a suitable type for this, that or the other make of machine. Millspaugh rolls are made to fit and to operate satisfactorily, regardless of type or kind or make of machine. The original standard open head design is recommended as preferable on account of accessibility for the machine tender ease of operation, box adjustment feature and proven superiority. We have made and are making, however, direct driven rolls, rolls with reduced bearings, rolls of cantilever or self-supporting type. The attention of the trade is respectfully called to these facts.

THE PAPER & TEXTILE MACHINERY COMPANY

informed concerns engaged in the manufacture of variable speed transmissions.

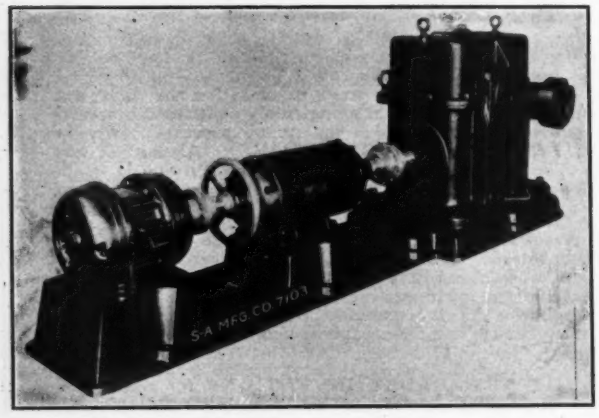
Applications of Planetary Variable Speed Transmissions

The most recent development in variable speed transmissions to have won distinctive approval in a number of services encountered in pulp and paper making activities, the planetary variety of transmission which was referred to in the discussion of October 27, 1927, is in reality a very adaptable combination of efficient speed reducer and variable speed transmission. At present, the device in various sizes is procurable with maximum speed ratios of 8 to 1 and 40 to 1, with speed variation ranges of about 5 to 1. The greater speed ratio is effected by the introduction of a planetary gear set mounted between the main housing and the variable speed end housing of what corresponds to a transmission with an 8 to 1 maximum speed ratio, in operation the variable speed mechanism preceding the speed reduction unit.

While this extremely flexible transmission, combining variable speed transmission characteristics with the speed ratio of a speed reducer, has yet to win that endorsement of the paper making industry earned by the adaptation of the device to distinctly paper mill services, it has demonstrated its high rank as an efficient transmission in numerous services in which all paper and pulp mills are concerned. Views of three such installations are shown, concerning which a few remarks can well be advanced.

The first of these depicts one of the standard 8 to 1 speed ratio units with a 5 to 1 variable speed range driving a screw feeder. A relatively inexpensive high speed motor actuates the unit and by virtue of the 3 to 1 gear-pinion connection to the screw shaft of the feeder the maximum speed reduction between motor and screw is elevated to 24 to 1. The variable speed range of the feder with a 1,200 r.p.m. actuating motor is, consequently, from 50 to 250 r.p.m.

The second of these planetary variable speed transmission illustrations depicts one of the units of larger speed ratio and slightly greater variable speed range used to control the speed of a centrifugal pump. The motor speed is 1,200 r.p.m. and the minimum pump speed 24 r.p.m., a speed ratio of 50 to 1, while the variable speed range of the pump is from 24 to 144 r.p.m., a variable speed range of 6 to 1.



Courtesy: Stephens-Adamson Mfg. Co.

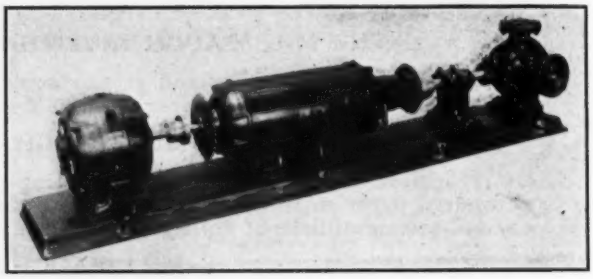
FIG. 4.

Planetary type variable speed transmission combined with worm gear speed reducer. Motor speed: 1,200 r.p.m. Slow speed reducer shaft 1.57 to 8.23 r.p.m. Maximum speed reduction: 760 to 1. Variable speed range: 5.25 to 1.

The final illustration shows a similar planetary variable speed transmission interposed between a 1,200 r.p.m. motor and a worm gear speed reducer. The slow speed shaft of the latter delivers power at any speed between 1.57 and 8.23 r.p.m., a maximum speed reduction ratio of 760 to 1 being attained by the compact assemblage with a variable speed range of 5.25 to 1.

In discussing the various applications of variable speed transmissions, the aim has been to demonstrate by the citation of specific installations the truly important part played by approved types of such units in the modernizing of the mill and its power plant. The references also should show how high quality and quantity standards in production, with profit and stimulation of business, are well within the grasp of almost any mill without entailing any prohibitive investment.

While few mills have apparently deemed it worthwhile to maintain accurate service records showing the value of the savings which have been effected in actual figures, quite general satisfaction is held with the benefits realized by virtue of the sensitive control and regulation attributable to the use of variable speed transmissions in paper mill services. For instance, at one mill where the first of a number of hydraulic variable speed transmission paper machine drives had been in service for a matter of only six to eight months the statement was made that the investment entailed, as represented by the entire cost of the drive, would be returned in two years by the reduction in maintenance on friction clutches alone.



Courtesy: Stephens-Adamson Mfg. Co.

FIG. 3.

Planetary type variable speed transmission used to control speed of centrifugal pump. Motor speed: 1,200 r.p.m. Pump speeds: 24 to 144 r.p.m.

At another mill where four paper machines are driven by variable speed transmissions, it is claimed that production has been increased by approximately one-third by the ability to operate the paper machines at exactly the proper speed under all conditions and by the fact that when changing from runs on one weight paper to runs on another it is not necessary to shut down the machines in order to effect the change. At still another mill, the opinion was held, after only about eight months service with a variable speed transmission paper machine drive, that production had been stimulated some 80 tons over records of previous years.

The chief endorsement of the worth of modern variable speed transmissions in paper mill services is evidenced by the fact, however, that all manufacturers of such tried and approved mechanisms derive the greater proportion of their business with the mills serving the paper industry from previous customers. Much of their business takes the form of "repeat orders" for variable speed transmission equipment to serve additional paper making equipment of the type already employing such transmissions, but a good deal of the business, even from old customers, also comes for devices to be installed for new applications, so far as the mills are concerned.

National Blank Book Co. To Build

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 10, 1929.—Announcement was made last week that work would be started immediately on a five story addition to the plant of the National Blank Book Company at Riverside. The contract has been let to the Casper Ranger Construction Company and it will cost about $100,000. The addition will front the railroad tracks and be built of brick, concrete and steel with floor space of 5,500 feet on each floor or 27,500 altogether. The fifth floor will be used by the printing department, fourth floor will contain the research laboratory, office of office of superintendent, and maintenance department.

The Last Word in Screen Perfection

End your Screen troubles with the well-known Leith-Walk Rotary Screen; open and accessible for cleaning; low in maintenance cost; requires but 2½ h. p. to operate and screens to perfection; sound theory backed up by advanced engineering and quality workmanship make this screen a lasting investment in trouble-proof satisfaction. See one operate and be convinced.

E. D. JONES & SONS COMPANY

PITTSFIELD, MASS., U. S. A.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

Reducing the Costs of Distribution*

By Robert F. Elder[1]

The recent emphasis on problems of distribution is a corollary of the increased complexity of our productive system. Distribution may be defined as the process of transferring goods from factory or farmyard to the ultimate consumer. An economist would say that production creates "form-utility" distribution, "time-utility" and "place-utility", the producer creates something which people want; the distributor conveys it to the people who want it, at the time when they want it. Until very recently, production has been the dominant problem. In the beginning of civilization every man was his own producer, and there was no distribution problem. The division of labor, whereby one man raised cattle, another made shoes, and a third milled flour, increased productive efficiency, and at the same time made necessary a system of distribution so that all three could have beefsteak, shoes and bread. Yet the principal problem lay in producing enough of these commodities to satisfy those who wanted them. There had generally existed a "seller's market."

The improvement of the mechanics of production; the transition from handicraft to shop, from shop to modern factory, has been a succession of steps toward specialization and centralization of industry. In the beginning we were a people of few wants, rather indifferently supplied. As those few wants were better satisfied, there was time to discover new wants, and the clamor for "more production" continued. In response, better machinery was invented; labor grew more efficient; research discovered new methods; better plans of organization were evolved.

Distribution Lagged Behind

Distribution lagged behind in the rapid advance of productive efficiency. As a general rule whatever was made could be sold profitably. Distribution therefore often proceeded by devious channels established by chance and perhaps long since rendered obsolete. It was inevitable that eventually the backwash from a clogged distribution system should slow down the wheels of production. The Great War played its part with its accompaniment of improved organization methods, and new mechanical equipment. The war period probably marks the turning point from seller's market to buyer's market. For the first time there was capacity to produce more goods than people could consume.

The goal of every manufacturer is to operate his factory at somewhere near its capacity. Most manufacturing industries carry a heavy load of overhead, and capacity production, on a profitable basis, is the surest road to dividends. But no business can long produce more than it can sell. The easiest way to increase sales volume, as every business man knows, is to cut prices. To decrease prices and still operate profitably means that lower costs are necessary.

The Buyer's Market

When the "buyer's market" came into being, every effort was made to cut production costs. Labor was speeded up; improved methods were installed; new and efficient factories were built to obtain the advantages of "mass production". In general, the greater the volume of production, the less is the cost per unit; but also, the more difficult is the problem of distribution. In many cases a high distribution cost acts as a bar to maximum volume. It minimizes the effect of production economies. If half of the consumer's dollar goes for production and half for distribution, a ten per cent reduction in costs of production means only a five per cent reduction to the consumer. A price-cut due to reduced distribution costs is just as potent in increase of sales volume as a cut due to production economies; and in the present state of industry it is much easier to effect.

The greatest reason for high distribution costs is the fact, already mentioned, that increasing specialization of industry brings as a consequence an increasing complexity of distribution. As the one is simplified the other becomes more complicated. This, of course, is inherent in our industrial system. On the whole, the advantages of our productive system far outweigh the difficulties it causes. There is, however, a point of balance, beyond which an increase in the centralization of industry leads to a disproportionate increase in distribution costs. Many large industries are now following a policy of decentralization, establishing branch plants or subsidiaries where it is possible in this way to distribute more efficiently or at lower cost.

Indefiniteness of the Problem

A great obstacle to the remedying of high distribution costs is the very indefiniteness of the problem. It is impossible to weigh and measure the factors involved with the precision afforded by production problems. Physical distribution, exemplified by such items as freight rates, warehouse charges, and the like, is susceptible of control; but there is no easy way to hold a stop watch on a salesman. Even the establishment of quotas presents a study in intangibles.

Indefiniteness does not excuse the many inefficiencies of distribution. There is the house that sends salesmen into their territories with a wish, a prayer, and a sample case. Too often a manufacturer who pays his jobbers a fat commission sends out his own

* Management Review.
[1] Specialist in Market Research, Brown Co.

SHELL

THE plant engineer who uses Shell lubricants has a world of expert opinion with him. Many of the most profitably operated factories in the country are 100 per cent Shell lubricated.

The widespread and growing use of Shell oils in industry is due to the Shell policy of *exactly* suiting the lubricant to the machine. Shell engineers do not have to recommend stock oils which, at best, only *approximate* specific needs.

Talking over your lubrication requirements with a Shell technician when he calls, places you under no obligation . . . and more than likely will result in measurable operating economies in your plant.

SHELL PETROLEUM CORPORATION
SHELL BUILDING
ST. LOUIS, MO.

©S. P. C., 1929

crews of salesmen to do the work, and in effect, pays the same bill twice. There is the man who insists upon nationwide distribution, when he could sell his entire production within a hundred miles of his factory. Some textile mills in New England entrust their sales to agents who handle several competitive lines. There still survive, somehow, the concerns which never ship orders on time, or correctly; and some of the firms which will give credit to any Tom, Dick and Harry who will buy a bill of goods. One of the worst offenders is the man who advertises in a certain medium because "Jones does it." It is one of the most remarkable facts of American business history that so many concerns indulging in similar inefficient practices have been able to cheat the bankruptcy court. It demonstrates as nothing else could, how little attention American business in general has been forced to pay distribution problems.

Insatiable Demand for Business

In many instances the high cost of distribution is chargeable to an insatiable demand for volume of business. This leads in many cases to intensive "high-pressure" methods, with crews of canvassers, unwarranted advertising appropriations, and the other trappings of "business at any price." The craze for volume may be due in part to the pressure of accumulated savings seeking investment; which makes it easy to find capital for plant extensions and for new ventures. Even a small increase in real wages brings about a large increase in the margin between the subsistence level and income. Actual living expenses, such as rent, food, and clothing, show only a moderate increase. Expenditures for luxuries and semi-luxuries, like automobiles, electric refrigerators, radio sets, increase very considerably. Savings also show a large increase quite disproportionate to the increase in real wages. Accumulated savings directly, or indirectly, seek investment in productive enterprise. Thus the practice of saving exerts on the one hand a pressure toward increased production, while on the other hand it diminishes the funds available for purchase of consumer's goods. Messrs. Foster and Catchings have developed this thesis, in "Business without a Buyer", to a conclusion which is perhaps a little extreme. Nevertheless, the fact of easy money in fostering over-expansion is apparent in many industries. Over-expansion means a scramble for markets, and in many cases a high marketing cost as well as low or non-existent profits.

Although distribution costs include many intangibles, there is no reason why the same principles which have been so successful in the production field cannot be applied to their reduction. The mechanics, of course, must be different. In the automobile industry it is hardly possible to have a conveyor belt bring a prospect to the end of the assembly line as each finished car comes off, entrancing though the picture may be to minor executives. Much can be done, however, as the General Motors Corporation has demonstrated by its truly remarkable results in coordinating shipments and sales.

Analysis of All Factors

The road to lower costs, in distribution as in production, is a thorough-going analysis of all the factors contributing to the problem. The fundamental requisite is a real comprehension of economic principles, not as text-book rules, but as forces which operate as inexorably as chemical laws. It is surprising to see how little some business men concern themselves with economic laws. Perhaps it is because they are so seldom demonstrated in a tangible, clear-cut manner. An advertising man recently remarked that the law of supply and demand had been repealed; that any amount of any product could be sold, given a sufficiently large advertising appropriation. He expressed a very common misconception. The "law of supply and demand" does operate. Supply and demand are not static; they are both in a continuously dynamic state. At any given time, a definite quantity of any commodity can be sold at a given price. Advertising, changes in customs or fashions, or seasonal changes, all affect the quantity salable at a price from day to day.

The demand for most commodities is elastic, that is, it can be increased by reductions in price, or by increased selling efforts. The California walnut growers disposed of a phenomenal crop in 1927 by the combined expedients of lower prices and an advertising campaign. The elasticity of demand for a commodity may be represented by a cone, divided into horizontal segments. The broad, base segment represents the consumption at the minimum price; and the narrow tip represents the consumption at the highest price possible to obtain. An absolutely inelastic demand, as in case of coffins, is represented by a cylinder. A highly elastic market, where consumption varies greatly with small changes in price, is represented by a shallow cone with broad base. Some such conception of the nature of markets is essential in order that proper methods may be applied in each case.

Measurement of Intangibles

Efficient distribution is a science of measurement of intangibles. "Know your market" is the first and greatest commandment. Many an industry has caused itself severe pains by attempting to crowd ten millions worth of product into a five million dollar market. The newsprint industry offers a beautiful example. There are dozens of others. Call it a "saturation point" or what you will, there is a limit to the amount of any commodity which can be sold profitably at a given time. As that point is approached the economic law of "diminishing returns" begins to operate. Increased volume is obtained only at a constantly increasing cost per unit. Your salesman is getting down closer and closer to the marginal consumer; prospects are scarcer and harder to sell; and costs of distribution creep upward. Suppose a concern with a monopoly in its field has a million prospects. By strong and well-planned sales efforts it has sold half of them. The sales manager figures that two and two make four, and that if he sends out twice as many salesmen, and doubles the advertising appropriation, he can sell the other half million prospects. But the easily sold prospects are out of the market, and those which are being worked on are harder to convince. With twice the selling cost, the volume of sales is increased perhaps fifty per cent. More business is being done, but the distribution costs have increased more than proportionately.

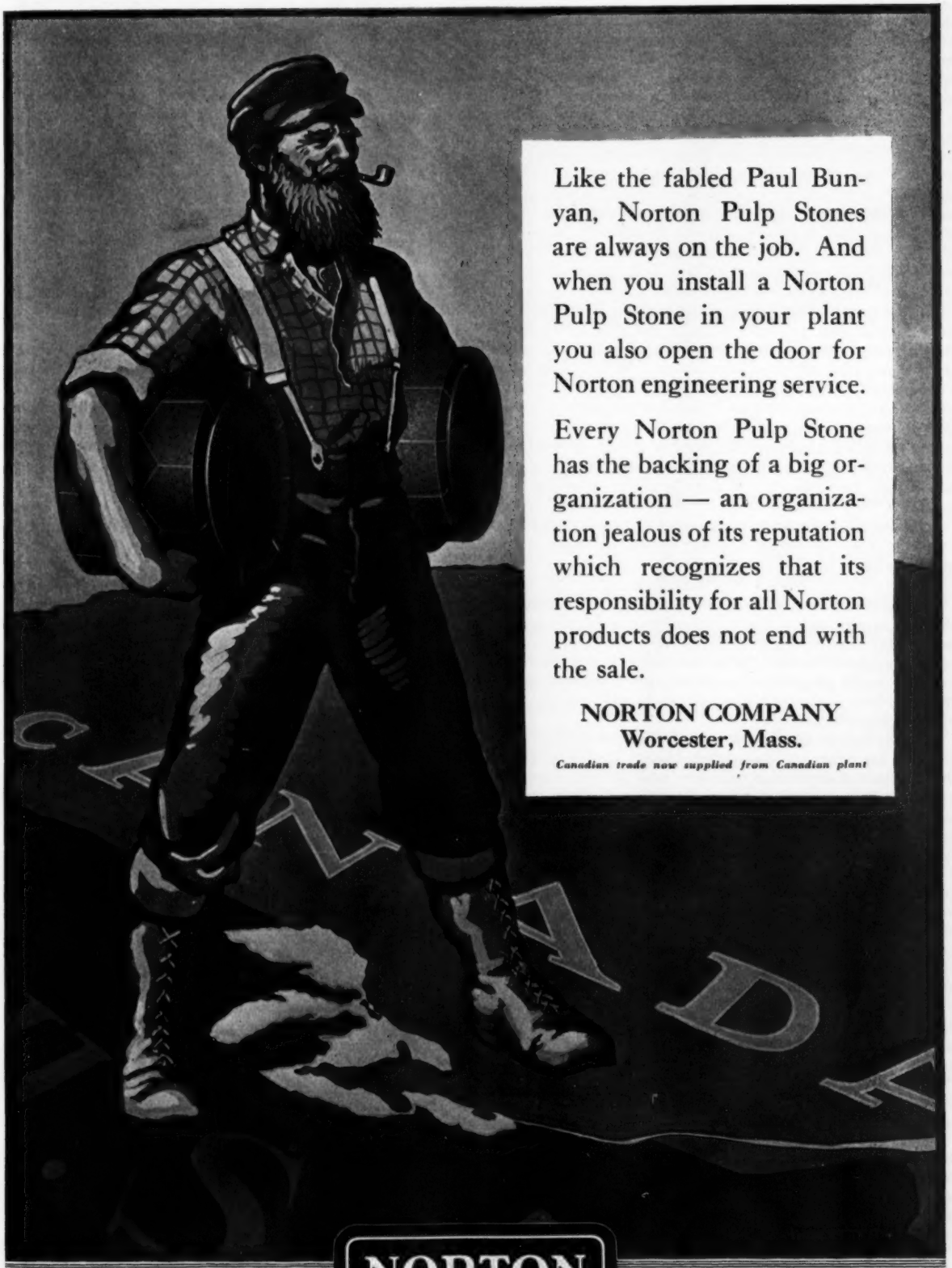
Often statistics are available which make it possible to measure very closely the total market for a commodity. In other cases it is necessary to resort to estimates. There is no reason for abandoning the analysis; a guess is better than blank ignorance. Once the total market for the commodity is known, or estimated, the firm's place in the market is determined. Here, at least, is something concrete and measurable.

Evaluation of Competition

Then comes evaluation of competition. What competitors are expending, and how will the market absorb the added production? What outside forces are at work to increase or decrease the total consumption of the commodity? Having determined the size of the market, and the slice which competitors will probably get, it is possible to set a reasonable quota for the individual company. This can be checked with records of past sales.

Then comes the question of distribution cost. This requires thorough analysis. In what lines are we in the zone of "diminishing returns"? Perhaps there are sizes or styles of product which are unduly expensive to sell. Cut them out! Perhaps sales made within a radius of a hundred miles cost much less per unit than those made at greater distances. Very well, let us increase our efforts in the hundred-mile zone and try to increase the percentage of our sales made there. Perhaps sales through department stores show a lower cost per unit than sales through small retailers. Can a greater proportion of our production be sold through department stores? Perhaps advertisements in newspapers show better returns than those in magazines. Then increase the proportion of newspaper advertising. Perhaps those salesmen who use cars show lower selling cost per unit than those who travel by train. The question of providing cars for all salesmen becomes pertinent.

It is an old and trite saying that "Knowledge is power." In business today knowledge is life itself. Before costs can be reduced



Like the fabled Paul Bunyan, Norton Pulp Stones are always on the job. And when you install a Norton Pulp Stone in your plant you also open the door for Norton engineering service.

Every Norton Pulp Stone has the backing of a big organization — an organization jealous of its reputation which recognizes that its responsibility for all Norton products does not end with the sale.

NORTON COMPANY
Worcester, Mass.

Canadian trade now supplied from Canadian plant

Grinding Wheels
Grinding Machines

NORTON
PULP STONES

Refractories - Floor and Stair Tiles

they must be known, if only to determine whether the measures taken for reduction are successful. Before quotas can be set and salesmen routed intelligently, the extent of the market must be known, not only as a whole, but in individual districts. Before a large advertising campaign can be launched with certitude of success, the efficiencies of different media must be known.

"Market research" and "market analysis" are terms usually given the functions of determining such facts. They are often abused, like many another newly popular designation; "psychology," for example. There is plenty of quackery in market research. It is a vital function, however. An efficient department devoted to the study of distribution questions, whether consisting of part of the time of one of the executives or the exclusive services of a score of experts, can be of the greatest aid in holding down distribution costs. Only by thoroughgoing analysis of both product and market can an efficient distribution policy be built.

Business success today lies in producing what people will buy; not in making what you want to make and then bending every effort to sell it. This is a truth which has not percolated into the minds of many executives. Others accept it in theory and ignore it in practice. Failure to recognize this fact keeps the distribution costs of many products sky-high. "You can fool all of the people some of the time, and some of the people all of the time;" but fooling the public is an expensive business at best. It is far simpler and easier to learn what people want and give it to them, than to guess wrong and have to cram the mistake down the public throat. Here is one opportunity for a market analysis function. The consumer's preferences can be studied and the product so fitted as to reduce the selling pressure required, and hence decrease the cost per unit.

Public's Ability to Buy

The public's ability to buy is the next point for investigation. Obviously, a man with a goodly cash surplus is a better prospect than another who is struggling on the verge of bankruptcy. By utilizing available statistics, a market analysis department can determine which geographical areas and which economic classes afford the best sales possibilities, and so furnish a guide to the efficient distribution of sales effort.

The sales records of past years, if at all properly kept, offer a rich field for exhuming constructive ideas. They should show what channels of distribution have been most efficient; what trade areas have been covered at reasonable cost, and where competition, or distance, has made distribution expensive. From them it should be possible to determine what forms of advertising have been worth while, and what have proved mere wasters of profit. In fact, here is the possibility of a real laboratory to study the economic aspects of a business, just as a chemical research laboratory studies its technical problems. John Jones, the grocer, can be his own market research staff. If he is in a position to know, for instance, that orders delivered within a one mile radius carry a delivery cost of five per cent, while orders delivered at a distance of ten miles cost fifteen per cent for delivery; he is in a position to restrict his free delivery service and thus cut down at least one item of distribution cost. If he sends out direct mail advertising, and knows that his cost for letters sent to one section of town is one per cent of sales made to customers of that section, while in another section the ratio is four percent; he is in a position to concentrate his advertising where it is most productive, and make another cut in his cost of distribution.

Similarly with John Smith, the manufacturer. If he knows that there is a good corn crop, and that the price is at a profitable level; he realizes that the salesmen he sends into Iowa will bring back orders as well as expense accounts. Knowing the facts, he spends most of his sales appropriation where prospects for business are good, and keeps down his cost of distribution.

There are two ways to cut distribution costs. One is to spend less money to sell the same volume of goods. The other is to sell more goods without increasing the total amount spent for distribution. Knowledge of every phase of the market is the sine qua non of either method.

Many people see in the money spent for advertising an unnecessary addition to the costs of distribution. In many industries, and in many individual cases, it is true that advertising has taken the bit in its teeth and is running wild. The situation is nothing to worry about. In due time, the advertiser who is content with ten cents worth of return for a dollar spent will receive the reward he deserves. The up-to-date business man may spend his millions in advertising; but he will know that it is bringing him in enough business to justify its cost. And he will really know, and not be obliged to depend on an advertising agency for proof. Only the old-timers and the blind imitators—although today there are many of them—play the drunken sailor with advertising appropriations.

Clamoring for Productive Investment

Competition is becoming keener day by day. A tremendous and constantly increasing volume of savings is clamoring for productive investment. Most of the sound stocks have been forced upward in price, so that common stock yields are down to four and five per cent. New outlets must be provided for the funds seeking investment; and it will not be hard to finance strong competition in fields where wasteful methods persist. Inefficient production methods have gone by the board so far as successful companies are concerned. Wasteful methods of distribution offer just as great an opportunity to competition.

Efficient distribution is a many-sided problem. The product must be such that it will be readily accepted by the consumer without the need for expensive "education,"—too often a polite term for bludgeoning a man into buying something that he does not want and will never use. It must be satisfactory in use, so that repeat business will be held. Production must not be beyond the capacity of the market to consume at a price profitable to the producer. If the market is glutted, there is always a panic of high-pressure selling which never pays its own way. The sales efforts put forth should be of the nature and extent to produce the maximum results per dollar spent. To insure this, plans should be drawn up in advance, taking into account economic, geographic, and climatic conditions. Records should be kept, in which results are analyzed for guidance in future years. An open mind or new methods and new channels of distribution, tempered with a plentiful supply of that oldest and rarest ingredient of business, sound common sense, will complete the equipment of an executive who can sleep nights.

The Consumer's Interest

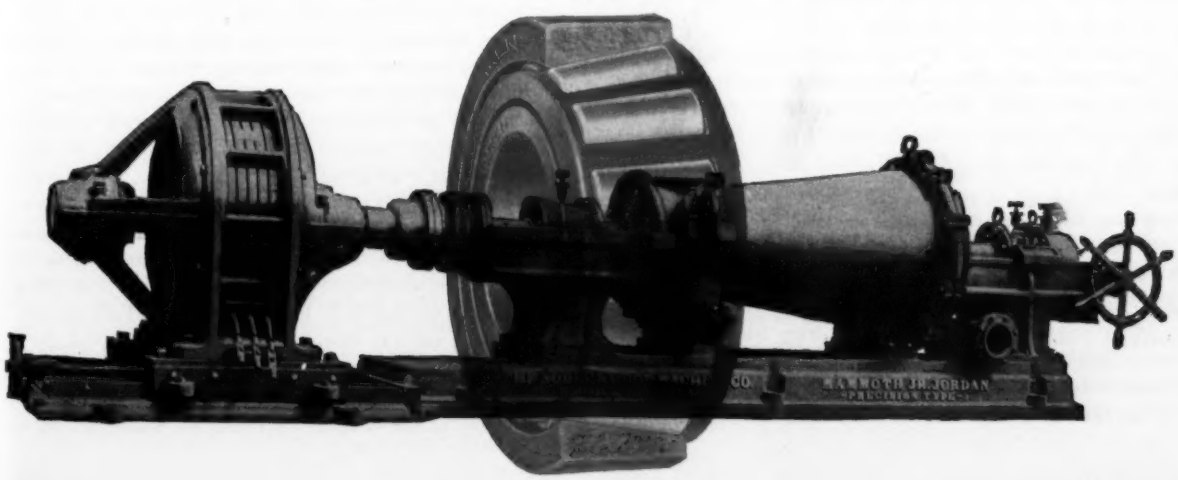
We have been concerned thus far with costs of distribution from the business man's standpoint. The consumer also has a stake in the question. He is paying too much for many of the goods he is buying. Moreover, there is evidence that he is beginning to realize it. In many cases, high distribution costs are responsible. In other cases it is a matter of simple profiteering. The basic cause, in either case, is the consumer's indifference. One might go so far as to say that distribution costs are conspicuously high only in those instances where the consumer will stand for them. It is a fact that bulk food products, the goods which interest the mass of people most deeply, are distributed at lower cost than practically anything else. If the consumer ever acquires the habit of spending efficiently—and in order to enjoy all the luxuries he is learning to desire he may be obliged to do so—distribution costs will seek rock-bottom levels in a hurry.

It is possible that we are now passing through a transitory economic period. Many people are experiencing their first taste of a surplus over bare subsistence. Millions upon millions are being spent recklessly, foolishly. In such a period it is no wonder that wasteful methods are widespread. But what of a severe business depression, to which we are probably not immune? People living on restricted incomes buy frugally, and in general, more wisely.

The best insurance for the future is to pare distribution costs down to "fighting weight."

NOBLE & WOOD PRECISION JORDANS ARE "TIMKEN EQUIPPED"— a significant detail that contributes largely to precision performance. ¶ Timken Tapered Roller Bearings have established their own reputation for endurance, operating economy and precision. In the Jordan they acquire a new faculty — maintaining the plug in perfect alignment at all times. Ordinary bearings eventually permit the plug to ride low in the shell, causing unequal wear on plug bars and shell lining, lack of uniformity in refinement and reduced efficiency in production. ¶ Timken Bearings, practically friction free (wear is imperceptible after hundreds of millions of revolutions), keep the plug shaft perfectly central at all times, with stock refinement under complete control. Filling replacement is minimized; annoyance and loss of production through shutdowns are negligible; power costs are reduced. ¶ In every respect Timken Bearings have a vital bearing on precision performance and production. ¶ Other Noble & Wood Jordan models can be Timken equipped on special order.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York



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COMING EVENTS

Technical Association of the Pulp and Paper Industry, annual fall meeting, Richmond, Va., September 24 to 26, and Washington, D. C., September 27.

National Paper Trade Association of the United States, annual fall convention, Congress Hotel, Chicago, October 7 to 9.

Paper and Pulp Section of the National Safety Council, Eighteenth Annual Safety Congress, Stevens Hotel, Chicago, September 30 to October 4.

Convention of the Cost Association of the Paper Industry, Hotel Wausau, Wausau, Wis., September 19 to 21.

NORTHWEST PAPER INDUSTRY EXPANDS

Writing as financial editor of the *Sunday Oregonian,* Portland, John K. Truebridge gives a most optimistic resume of the pulp and paper industry of the Pacific Northwest.

Things seem to be looking up in the Northwest pulp and paper industry, and if expansions and new construction continue at their present rate it promises to become one of the most important manufacturing enterprises in this part of the country. Financial news of recent weeks has carried several important announcements of plant expansions and the Crown-Willamette report shows an increase of 33-1/3 per cent in quarterly earnings over last year's period.

It is expected that a contract will be awarded this month for construction of a bleach plant on the Camas, Wash., property of the company as the first major step in a $4,000,000 expansion program on which preliminary operations were started in July. Two additional paper machines have been ordered and a third will be ordered shortly. Plans have been completed for the rebuilding of five of the company's paper machines.

Arrangements have been made for financing the Willapa Pulp and Paper mills, and early construction of a plant between Raymond and South Bend, Wash., is anticipated by officials. Some preliminary construction has already been done and arrangements have been made with the city of Raymond for an adequate water supply.

Financing details also have been completed for the new Puget Sound Pulp and Timber Company, which will build a $3,500,000 plant at Everett, Wash., with a daily capacity of 150 tons of bleached sulphite pulp. Harry H. Fair, of the investment banking firm of Peirce, Fair & Co., came north from San Francisco to complete financial arrangements.

Pacific Mills, Ltd., subsidiary of the Crown-Willamette plans to spend approximately $1,500,000 in construction of a power plant and other additions to its plant at Ocean Falls, B. C. Partial construction of a plant was decided upon to prevent recurrence of the costly tie-up suffered last spring when the water shortage made it necessary to close down three of the largest paper machines for about five months.

These are some of the highlights in a general program of development which will eventually add millions of dollars to industrial capital and income in a section that a few years ago hardly thought of paper and pulp manufacture as an industry of any consequence.

CERTIFIED RECORD PAPERS

The L. L. Brown Paper Company of Adams, Mass., for 80 years manufacturers of fine record and correspondence papers, is announcing a new service to users of important records and documents. It provides for the certification or guaranteeing of such records in regard to quality, durability and permanence. In addition, it embraces the certifying of each L. L. Brown paper in respect to certain properties and to the raw materials from which it is made.

An especially noteworthy feature of the service is that relating to the certification of raw materials. So that buyers may have exact information about the papers they purchase, the company is now indicating the kind of rags of which each of its products is made, and in each instance is stating the precise percentage as well. So far as known, this is the first time a paper mill has divulged such information about all its lines. This phase of the service is one which undoubtedly will be observed with a great deal of interest.

In a booklet, "Certified Papers", which has been issued in connection with the new service, the company describes the basic reasons for certification and the advantages to consumers, paper merchants, printers, stationers, blank-book manufacturers and others.

The booklet explains that charters, deeds, patents, formulas, the accuracy of records and even the vaults in which these important documents are stored, are certified. It then points out that the most important factor of all—the paper of which these documents are made—is not guaranteed against disintegration. Thus, the elaborate precautions taken to safeguard vital documents are largely valueless so long as the paper itself isn't immune to the ravages of time and hard handling.

It is stated that heretofore it has been extremely difficult—if not impossible—for the average consumer or even the supplier, to know positively as to the quality and properties of the paper he was using. Reference is made to the large number of kinds and varieties of paper now confronting the consumer. The booklet then calls attention to the absence of precise information concerning them, and the consequent difficulty in selecting intelligently.

To assist in correcting this condition, the company, the booklet states, is affixing a certificate to all its products. This certificate guarantees (1) that the rags from which L. L. Brown papers are made are none but white linen and cotton clippings, the percentage being clearly indicated; (2) that L. L. Brown products are free from destructive residual chemicals in either the partly finished or finished paper; (3) that L. L. Brown papers are wholly immune to disintegration; and (4) that they are of the highest quality and value and have the greatest degree of permanency and durability in their respective grades.

Distributors of the company's products are provided with sup-

plies of the certificate. In this way the label is made available to printers, stationers, lithographers, blank-book manufacturers et cetera for use on printed matter and books produced from these papers. The purpose is to provide users of the concern's lines with a means by which they in turn can guarantee their product to their customers and at the same time identify themselves with the company's advertising.

In connection with the latter, the announcement regarding the new service states that special educational work will be done among consumers. Its object will be to assist them in determining which of their records and documents should be certified or guaranteed as to quality, permanence and durability. It is pointed out that this service will instill a greater appreciation of the advantages of using quality papers for vital documents. It is felt that this development should inevitably create a larger market for quality printing and related processes, which in turn should mean less emphasis on price—less need of minimizing legitimate profits. In brief, the company believes that this new service to consumers will necessarily result in broader opportunities for all concerned.

The company sponsoring this service has specialized in the manufacture of quality record and correspondence papers since 1849.

America Ousts Europe As Wood Pulp Leader

European paper making countries no longer dominate the industry, although they constitute one of the most important units, according to General Manager S. H. Logan in the September commercial letter of the Canadian Bank of Commerce. "With the development of the wood pulp process Canada and the United States have also come to the fore," he says, "both in the manufacture of paper and as sources of its raw materials."

"The mills of the larger European countries other than those of the North are almost wholly dependent on foreign pulp, whereas the large supply of suitable wood and water in Sweden, Norway, Finland, the United States and Canada has caused phenomenal expansion in these countries."

A chart accompanying Mr. Logan's statement based on figures collected by the League of Nations, shows the development in world production of wood pulp from 1913 to 1927 inclusive. According to the latest figures the United States leads in chemical pulp, although part of the wood required is furnished by Canada; in fact the United States meets slightly more than half its paper needs by importations of pulp wood, pulp and paper.

The countries next in rank in the output of chemical pulp are, in the order named, Canada, Germany (mainly from imported wood), Finland and Norway. Canada is the largest producer of mechanical pulp, followed by the United States, Germany, Sweden, Norway and Finland. Comparative production in metric tons was as follows: United States (1913) 4,780,000, to (1927) 8,400,000; Canada (1913) 550,000, to (1927) 2,240,000; European and other countries (1913) 5,937,000, to (1927) 7,725,000. World production increased from 11,420,000 tons in 1913 to 19,152,000 tons in 1927.

Paper Makers' Chemical Corp. Let Contract

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 6, 1929.—The Austin Company has been awarded the contract for the recently announced new plant of the Paper Makers' Chemical Corporation of Kalamazoo, Mich., which is starting a new project in Portland. The cost of the first unit is to be about $75,000. The main building will be 60 by 160 feet with a second story over part of it. Ground floor space will be occupied by offices, warehouse and factory with assembly and charging facilities on the second floor. W. J. Lawrence is president of the company.

St. Regis Paper Co. To Increase Capital

Holders of common stock of St. Regis Paper Company will receive rights valued at nearly $14,000,000 under a plan for reclassifying and increasing the company's common stock, approved by the board of directors of the company. The proposals, which will be submitted for vote by the stockholders at a special meeting to be held September 16, 1929, include changing the authorized 1,000,000 shares of no par value common stock into 4,000,000 shares of common stock of $10 par value each and increasing the authorized number of shares to 7,500,000 of $10 par value. At the same time the preferred stock of the company, which now has one vote per share, will be given a voting power of four votes per share.

Of the increased common stock the directors propose to offer to holders of common stock of record at the close of business September 20, the right to subscribe to an aggregate of 800,000 shares of the new common stock of the corporation at $25 a share. This is at the rate of one new share of stock for each share of old stock then held. Subscription warrants will expire at the close of business October 21.

The St. Regis Paper Company will apply the $20,000,000 proceeds of the additional stock issue to the retirement of indebtedness incurred in connection with the acquisition of the business of the Bates Valve Bag Corporation and to increase working capital.

F. L. Carlisle, president of the company, in a letter to stockholders notifying them of the proposals, presents a consolidated balance sheet of the company as of June 30, 1929, adjusted to give effect to the proposed four-for-one split-up of common shares and the issuance of 800,000 additional shares at $25 a share. This shows current assets of $19,017,786, including $11,381,067 cash, against current liabilities of $2,101,701, a ratio of better than nine to one. Exclusive of $10,252,301 of funded debt, capital account shows $4,739,900 preferred stock and $40,000,000 capital stock outstanding, with surplus of $25,504,407.

Investments of the company are carried on the balance sheet at $26,816,199. These include 4,102,266 shares of common stock and 1,025,566 Class A option warrants for Niagara Hudson Power Corporation, carried at $24,853,317 and having a market value as of September 3 of $115,889,010.

Stockholders of the company of record September 5 will be entitled to vote at the special meeting which has been called for September 16. Directors of the company at their meeting declared the regular quarterly dividend of 75 cents a share on the no par value common stock, payable October 1 to stockholders of record September 10.

First German TAPPI Corporate Member

Zellstofffabrik Waldhof of Mannheim-Waldhof, Tilsit, Ragnit and Kelheim, Germany, has the distinction of being the first pulp and paper manufacturer of the new German republic to join the Technical Association of the Pulp and Paper Industry as a company member.

This company is a manufacturer of bleached sulphite pulps for rayon and paper mills of which it makes 300,000 tons per year and of white and colored tissues which it produces to the extent of 85,000 tons annually.

Goes With Hawley Pulp & Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

GROVETON, N. H., September 9, 1929.—Henry C. Reimer, well known color expert and beater man, has resigned his position with the Groveton Paper Company, Inc., at Groveton, N. H., and after September 1 will be employed in the same capacity with the Hawley Pulp and Paper Company, Oregon City, Ore. Mr. Reimer takes with him the well wishes of all his fellow-workers in the mill that he has just left and they all know that he will be highly successful in his new position.

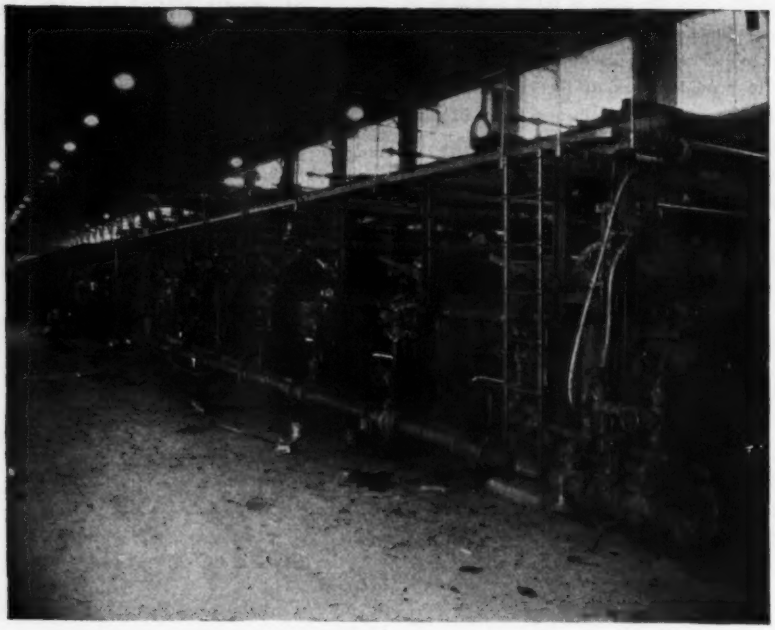


Photo shows a new 7 cylinder 132" board machine in a modern mill in the Middle West. This machine is equipped with 7 Goodrich Vulcalock couch rolls.

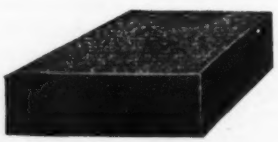
Far greater resistance to edge wear in these couch rolls

THE VULCALOCK couch roll is much tougher and has far superior resistance to edge wear than the ordinary couch roll because of the special process by which it is made.

This process—the Vulcalock Process—is an exclusive technique, developed by Goodrich, of joining rubber to metal by an inseparable bond — a bond as strong as the rubber itself. An adhesion of 500 pounds to the square inch is produced by the Vulcalock Process.

As a result, Vulcalock couch rolls are made without a hard rubber base and it is possible to effect a cure which gives a uniformly soft density to the entire cover, right to the metal core.

The rubber cover of a Vulcalock couch roll can be used until the rubber is worn down close to the core.



Aeroboard head box linings protect quality of the paper

Superior to African mahogany, cypress or other wood lining because Aeroboard does not accumulate slime and dirt. "Slugs" and imperfections in the sheet are substantially reduced. Head boxes lined with Aeroboard can be quickly hosed out while felts are being washed. Any good millwright can apply Aeroboard in your own plant by following our easy instructions. The box can be made absolutely waterproof. Send for details.

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Many prominent mills have already discovered the remarkable economy and efficiency of Vulcalock couch rolls and are ordering them to supplant old-type rubber rolls, as well as felt rolls. Vulcalock rolls will pay for themselves against any other type of roll made.

Vulcalock couch rolls may now be obtained with rubber attached by the Vulcalock Process to an aluminum core. Weight of aluminum couch rolls is two thirds less than rolls made with cast iron core. Aluminum couch rolls are especially adapted to cylinder machines making tissue.

We will gladly send additional information. Write to The B. F. Goodrich Rubber Co., Est. 1870, Akron, O., or in the West, Pacific Goodrich Rubber Co., Los Angeles, Cal., or fill in the coupon below.

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Practical Notes on Rifflers*

By G. Cesconi

The innovations and modifications that have been made during the past thirty years in the processes and machinery of paper making have been important, but not striking, since the main outlines of the various methods of manufacture and finishing remain as it were unchanged; and the general scheme of the principal machines, including the Fourdrinier, has not undergone substantial alterations. Still, the number of excellent ideas that both the science and practice have contributed to the paper industry has not been small, nor of slight importance, for today we can run efficiently a Fourdrinier 7 meters (276 inches) in width at a speed of 350 meters (1150 feet) and more; in addition, the Fourdrinier has been the object of studies and experiments of various kinds, and so in a different measure have all other paper machines, as is testified by the different theories concerning the operation of beaters, pumps for slow pulps, presses, etc.

On the other hand, rifflers, except for a recent ingenious device, have been almost overlooked, and no one seems to have made them the object of thorough and systematic investigations. In the paper mills, also, they are often neglected, both as parts of the machine, and in the room for making half-stuff; frequently, they are unobserved, even by the superintendent, perhaps because they are situated in a badly illuminated place in the mill, or perhaps because they are not credited with their true value. In our opinion the riffler is not an equipment to be passed over, or deemed less worthy of care than any other machine whatever; it is quite true that it may seem superfluous in many cases, and that the work it does could be done equally well by means of other devices. At all events, it should be borne in mind that it is one of the few machines that does not consume electric power or steam, or lubricants, and which does not require a great many hands to operate it; it may be said to go by itself, and since it renders a service that costs little or nothing, it certainly should be considered and estimated at its proper value.

In most rifflers it is possible to note errors more or less serious that might be avoided, if these are borne in mind during the construction of the equipment. Functional errors are copied, but might be avoided, if the normal lines are followed, that is, those rules that experience and good sense have suggested. In the brief notes here appended, we do not announce any novelty; but since in the textbooks, even the most recent, we read the same elementary things that everybody knows, it seemed not without profit to review those few points that have been suggested by our own experience and the experience of others.

* Bolletino della R. Stazione Sperimentale, No. 10, 1928.

To work well and not cause troubles in operation, a riffler should be of certain dimensions and be installed in such a manner that all impurities carried by the pulp shall be separated as effectively as possible and be retained by the apparatus. To accomplish this it is needful before anything else to take care that the filaments and coarser fibers do not imprison the heavy particles that are to be isolated, but that these may, instead, be detached and float freely in the liquid that holds them in suspension. A very considerable dilution is therefore necessary, varying according to the quality of the fiber and its state of disintegration and beating, and to secure uniform distribution of the solid bodies —fibers and impurities—in the depth of the liquid that carries them.

Important Factors Overlooked

Another condition is that the velocity be such as to permit the impurities to settle out of the stream, while at the same time preventing the fibers and loading materials commonly present from sinking to the bottom. In other words, there is a relation between the velocity of the flow, or better still, between the duration of the floating velocity of the fall of single particles immersed in the liquid; this relation necessarily varies according to the quality and physical properties of the pulp. The complex connection that exists between these important factors is overlooked; experience, however, has suggested means that may be of practical importance.

It is evident, then, that the sides of the troughs should be as smooth as possible, without projections, cracks, or badly made joints that may break the even deposits of solid and mucilaginous substances; nor should there be any dead angles, to retard the flow in its course and prevent the deposit of fibrous materials. For this reason, it is necessary to avoid abrupt changes in section and direction; but if this is not possible, the troughs should be joined together in a wide curvature.

These cause the fewest troubles because the pulp they purify is already sufficiently diluted, more refined, and, as it were, always cleaner than that from the manufacture of half-stuff; besides which, they are generally supplied by houses that make the Fourdrinier and with a layout according to their designs, presenting ordinarily no very grave errors of construction, since they are the fruit of long experience.

Screen Aids

They serve, as previously noted, to collect the impurities in the stock especially the heavier solids, for example, sand and cement abraded from the sides of the beater and bars, splinters from

the knives, particles of hooks and of buttons, and, too frequently, the mud dumped into the beater with sheets of pulps that have fallen on the pavement—so that these foreign matters do not reach the screens and eventually the machine. In this respect, the riffler may be considered as a complement of the screens, which, in this way, are not only protected but freed of a heavier load. Logically, then, we should try to construct them of ample dimensions; but if this be done they take up most valuable space, often to the detriment of accessibility and normal adjustment of the installations of other parts of the machine. This is the origin of the notion grounded in the consciousness of builders that rifflers should not be too large, and that instead of them, refiners should be constructed on a larger scale. It follows, then, that we should endeavor to make them operate more efficiently, taking especial care that the stock reaches the riffler at the right velocity, and that the trough is inclined at the right degree. The inclination should not be great. Some authors recommend a slope of 2 per cent, which in my opinion is excessive. Rifflers with too sharp an incline in which the stock in its flow is not adapted to a slow current, but to a mountain torrent, have no scope, and are worse than useless.

The type most commonly employed is the classic one having troughs and baffles suitably inclined, as shown in Fig. 1. It is a matter of indifference in which direction the curve of the baffles meets the flowing stock. The discussions regarding this have been many, and opinions still differ. Some contend that when the baffles are inclined against the circulation as in Fig 1 (a), the heavy particles easily fall to the bottom, while in the other case, Fig. 1 (b), there is a greater difficulty in causing these particles to fall; on the other hand, some authorities claim that, when the catchers are bent in the same direction as the flow of liquid, the solid matter already deposited, is better protected against erosion by the current, that, in the first case, through a supposed formation of vortices, a portion of the solids would be raised and carried away. These questions, however, are of little moment, because they are certainly not the most important problem to solve, which is that of the best construction of the rifflers; and, in addition, experiments made on the baffles have given practically the same results in the two details under discussion.

Type of Pulp

It is not easy to indicate in general the dimensions that should be assigned to a riffler for a Fourdrinier machine, because these machines, apart from the quality of the paper produced, vary according to the quality of the pulp that they run. Thus, for instance, for a machine that produces an average of a ton of fine writing or printing paper a day, a riffler of 8 square meters, (86 sq. ft.) of surface may suffice, for another machine, with the same production of a ton a day, which manufactures a pulp

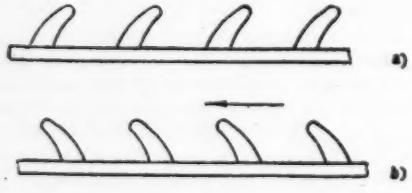


Fig. 1.

composed of ½ of cellulose and ½ of paper rags not previously sorted and cleaned, the area should be increased to about 16-18 square meters (172-194 sq. ft.). If, on the other hand, the paper waste is subjected even to a rough sorting, and before being ground, is freed from the mud it contains by being passed through a duster, the riffler would yield a pulp equally clean, though having a working area reduced one-half.

The depth of the stream fluctuates between 60 and 80 mm, (2.4 and 3.1 in.), and the velocity of the flow is maintained at 15 meters (49 ft.) per minute; in regard to the density of the liquid we cannot give absolute figures, because the stock is more or less diluted, according to the amount of dewatering that is to be carried out on the machine and the quality of the paper produced. Suppose a dilution of 1 : 200, an effective depth of 70 mm. (2.8 in.), and an average velocity of 15 meters (49 ft.) per minute, then for a machine capable of producing one tonne in 24 hours the rifflers should have an effective breadth (width) of

$$b = \frac{1 \times 200}{0.07 \times 15 \times 60 \times 24} = 0.132 \text{ m.}$$

Some mill operators advise us not to exaggerate size of equipment, because, apparently a riffler with troughs too large causes variations in weight.

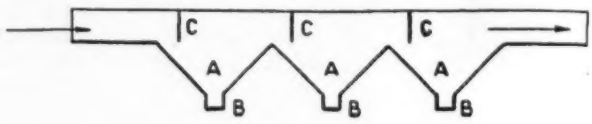


Fig. 2.

Retains Foam

Rifflers also serve to retain lighter impurities and foam, which, owing to a diminished velocity of the flow, rises and floats on the stock; to obviate this, strips or slats are fixed across the riffler before the stock outlet, like knives, placed in such a way that their lower edges extend a few millimeters into the depth of the liquid; still better are felts nailed to thin shingles of wood and carried up the sides of the trough.

Half-stuffs made of rags or waste paper contain shreds and tangled fibers, formed in the pumps and vats, or pieces of packthread and stitching coming from old books, etc., and not completely disintegrated; these impurities can be collected in the refiner. To avoid imposing too great a load on this machine, it is preferable to place in the stock inlet, possibly before the riffler, one or, still better, two rakes, with points of copper or brass that reach far enough into the water to touch the bottom, inclined against the flow and distant from each other by 25-30 mm. (1 to 1.2 in). The rakes should be movable, preferably working on hinges so that they can be raised and cleaned during the operation of the machine without interfering with the regular process of manufacture.

Sometimes magnets are used to remove splinters of iron. These are arranged across the stock inlet and may be fixed or rotary, like electro-magnetic drums. These are useful only in very special cases, for example, when it is necessary to manufacture a pulp composed of refuse of leather boards, old box boards, copy books, etc.

A type of riffler, not new, but little known hitherto in our paper mills, is that illustrated schematically in Fig. 2. The principle on which it is based recalls the mode of operation of the save-alls of the white waters of the Fourdrinier. The flow of pulp is indicated by the arrow. The number of the compartments A, three in the present case, may be increased, but, in general, there are generally not more than five. The bottom of each compartment is formed by the pockets B to retain the impurities, while above and toward the inlet, a dam C is fixed, which, besides retaining the foam, has the special function of making the flow smooth and of deflecting it toward the bottom in order to assist the sinking of the particles. Cleaning may be done with ease and dispatch by raising the felts on the bottom of the pockets, and by thorough washing with a jet of water.

These may serve in the manufacture of cellulose, wood pulp, and straw pulp. Let us pass over without further details chemical pulp, which in Italy is manufactured in small quantities and, hence, has only an indirect interest; on the other hand, as regards rifflers used in the preparation of cellulose, we may find useful hints and excellent ideas in the treatise of Deckmann on sulphite pulp, ideas, too, which are applicable to the manufacture of other raw materials.

Rifflers for Wood Pulp

In the manufacture of wood pulp, the riffler does not often reach notable proportions. As a matter of fact it is simply a question of removing impurities from a short pulp, of comparatively light consistency, and for its quality not very dirty; and in respect of the greater portion of other fibrous raw materials, of less intrinsic value. Wood pulp, therefore, has those properties that lend themselves to an effective use of the sand trap, and they permit a greater discretion in judging the degree of cleanness of the pulp. The type of riffler in Fig. 2 may be recommended as being more efficient than the ordinary apparatus with troughs; it occupies less space and is easier to superintend. Also, in this case, the velocity to be assigned to the flow should be around 15 meters, while the depth of the stream may be increased by 10 cm. (0.4 in.), and even more. The number of conical compartments is based on those already in operation; as a rule, it may be estimated that one compartment is sufficient for the production of 10 quintals (about 10 cwt.) of wood pulp in 24 hours.

In the manufacture of straw-pulp, the sand trap has far greater importance. It is true that it is necessary to work with long fibers, often in bundles and twisted together, which in spite of the removal of dust from the straw, still contain many impurities. These are mixed with fragments of buttons, hooks, buckles, splinters of celluloid, pieces of gum, etc., which escape the eye of the workmen during sorting and at the sand traps of the shredders. Besides this, the stock arrives at the regulating box too thick, so that it is necessary to dilute it immediately before it enters the riffler proper, and therefore, it cannot be mixed quickly and uniformly with water; it follows from this circumstance that lumps of stock are not completely disintegrated, and the impurities that they contain are eliminated with difficulty. If to all these difficulties be added the fact that we are working with an expensive fiber, from which we usually recover a half-stuff suited to the manufacture of the finest de luxe papers, it is easily understood why the riffler deserves to be studied and why it should have sufficient width, be constructed with care and, above all, diligently superintended during operation, if it is to have the desired efficiency.

On account of the foregoing considerations, if we wish to construct and judiciously apportion a riffler, the principles already set forth should be somewhat modified. The type proved in practice to be the most suitable is the equipment with channels. In actual run, for special reasons, the troughs should be very long, 80-100 meters (262-328ft.), but relatively narrow; it is further evident that, since the fibers carried are long, tangled, and without any loading, the speed of the flow should be maintained at

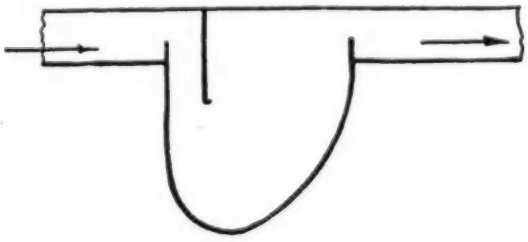


FIG. 3.

a slower rate, 10 meters (33 ft.) per minute, and the dilution may be as great as 1 to 300, or even 1 to 400. The depth, however, continues between the limits already given.

Suppose production should be 100 kg. (0.1 tonne) of stock an hour, the dilution in the ratio of 1 to 300, the depth of the stream fixed at 80 mm. for a velocity of 10 meters per minute, the width of the trough should be

$$b = \frac{0.1 \times 300}{0.8 \times 10 \times 60} = 0.625 \text{ m.}$$

Rate of Stuff Flow

The gross length of the trough might be reduced to a third if immediately after the mixing box, the speed of the stock is diminished in such a measure that the very heavy particles settle quickly. It might be sufficient to widen the channel, but, where it is possible, it is more convenient to decant by means of a siphon, as shown schematically in Fig. 3. A considerable portion of the more solid substances settle on the bottom and are

FIG. 4

then eliminated by raising the sluiceway opposite, and taking out the deposited matter with a spade.

On the bottom of the trough for its entire length, wooden dams are placed, united in elements of about 1 meter in length, and like gratings, adjusted so that they may be easily removed for cleaning. Instead of these, especially when the sand trap is made of reinforced concrete, it is possible to adopt the same system that is used to dam up the sand in industrial canals, that is, by building settling pockets, on the bottom of the trough as shown in Fig. 4, at suitable distances between them, in such a

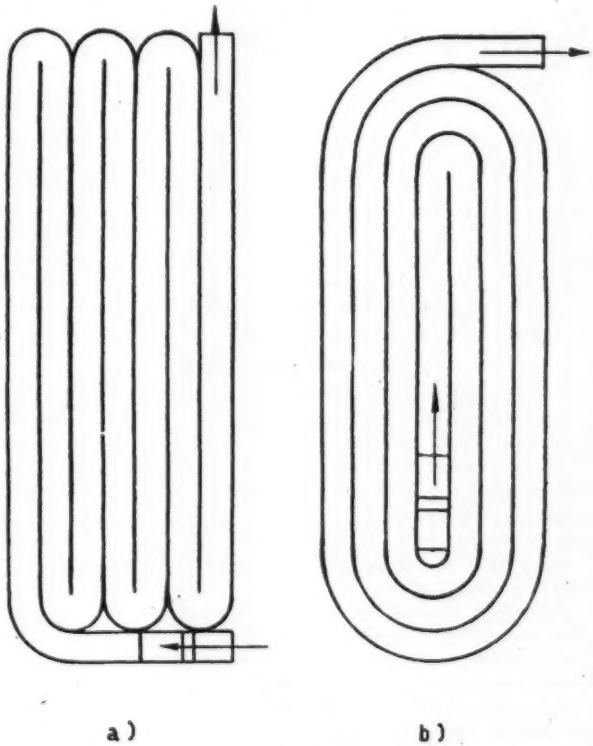


FIG. 5.

manner that they may be close together at the inlet and gradually placed farther apart toward the outlet.

The only serious inconvenience that this system presents is the difficulty of removing the dirt, and, it seems likely that, for this reason, the system is suitable only when the local conditions render the elimination of the settled materials easy to carry out.

Since the length of the riffler is always considerable, it is generally impossible to have a straight rectilinear run for the stock, and, consequently, it is necessary to wind the channel several times on itself, as shown schematically in Fig. 5 (a). In this way, the

sharp changes of direction that the stream is forced to undergo favor the formation of eddies and waves, which are detrimental to the smooth flow of the stock, since they cause another mixture of its components and tend to turn into foam any particles that should settle. Less unfavorable effects are obtained by softening the curves and utilizing the space as shown in Fig. 5 (b).

Smooth Flow Necessary

The essential thing is to secure a smooth and calm flow and to maintain a constant speed; an excessive increase in the latter causes the settled materials to rise and float; while a slow or smooth movement ensures the deposit of fibers. Since the solids in the stock are relatively small in quantity, when compared to the amount of water, it is obvious that the consistency should be regulated as far as possible, and especially, for this purpose, the proportion of water added should be controlled. No great difficulty will be encountered if water for manufacture is used, which generally comes from a central reservoir, and in any case is nearly always under the same pressure; the case becomes less simple when, for economy of water and fiber, the water comes from the condensers of the bleaching engines; for these, evidently, may supply a quantity of water inversely proportional to the thickness of the stock in the bleaching engine, and therefore variable. An automatic device to maintain a constant dilution of the stock in the riffler, that is, one that opens and closes at will the fresh water tap, and the tap for the circulation of the flow, we do not think practical, on account of the very great dilution necessary; and, still less, is regulation by hand practical. In such a case, it is therefore not advisable to connect the siphon of the condenser directly with the water pump for dilution; it would be better to collect the water in a tank into which the pump is introduced, thus forming a sort of reservoir for periods of scarcity.

Before every closing, and still more when this precedes a general cleaning, it should be borne in mind that the water be allowed to flow on for about half an hour after the pulp is formed; otherwise, the stock settles at a reduced speed and subsequently comes up mixed with dirt, or, at the best, it is recovered in minute quantities as a raw material of doubtful value.

Since business side of the production of straw pulp is quantitatively of a certain importance, a man is posted at the riffler; this is an excellent rule, even if the effect is sometimes negative, because the riffler man may be considered a useful reserve. By overseeing the riffler, constantly and diligently so that the thickness and speed of the stock remain constant, by frequently skimming the foam off with a shovel of metal cloth, correcting at intervals, and whenever it occurs, the flow by means of vertical baffles adjusted obliquely in the trough, and by a general cleaning up every week, half-stuffs are obtained well adapted to the manufacture of the finest papers, without impurities, and of beautiful finish.

European Developments in Paper Manufacture

By Marquard H. Lund[1]

[Editor's Note.—In the summer of 1928 the United States Bureau of Foreign and Domestic Commerce established a commercial attache post at Oslo, Norway. The author of this article was selected to represent this country in its effort to study and promote foreign trade. A large proportion of Mr. Lund's time is devoted to the pulp and paper industry in all of the European countries and this article reviews in an interesting way some of the more outstanding developments of an engineering and technical nature that have taken place during the past year.]

The Albenielsen Process

A Norwegian engineer, Albert E. Nielsen, has developed a new indirect cooking process for the manufacture of sulphite and sulphate pulp, which might be described as an improvement on the Morterud process. It has been called the "Albenielsen" system, and has had a thorough trial at the plant of the Fladeby Cellulose Fabrik near Lillestrom, Norway, the results of which seem to justify the claims of the inventor, that his new process shows a considerable saving in heat consumption, and also produces a pulp of excellent quality.

The Albenielsen system is of the same general design as the Morterud, so that it might be well to describe the latter briefly. The following is the explanation of it given in Volume III of "The Manufacture of Pulp and Paper":

"The Morterud is an indirect cooking process. But, while in the Mitscherlich process, the digester charge is heated by means of steam pipes placed in the interior of the cooking vessel, the liquor, in the Morterud process is heated outside the digester in a separate heating apparatus, which consists of a cylindrical vessel, in which a battery of steam pipes is placed. The liquor is continuously leaving the bottom of the digester, which is equipped with a large strainer, to hold back the chips, and is forced by a pump through the heating apparatus to an inlet in the top of the digester. During this continuous and rapid circulation, the liquor is being heated without being diluted. The idea which combines some of the advantages of the direct and indirect cooking process, has been successfully employed in the alkaline cooking process, but up to the present it has not proved a success in the sulphite process because of mechanical difficulties."

The Albenielsen system combines indirect cooking under forced or increased natural circulation of the cooking liquor, with simultaneous evaporation and condensation during the cooking process. The digester can be blown at the moment when the most satisfactory consistency of the liquor has been reached. The exhaust steam from each apparatus may be used for various purposes, such as drying, cooking or liquor, heating, etc., and the condensed water may be used for boiler feed, etc.

Although the saving in heat consumption is an important advantage in the use of the Albenielsen system, there are others. A more even cook is obtained, the yield is larger because less wood is used per ton of pulp, and less alkali also. Other savings will be apparent to the pulp manufacturer, which cannot be described in detail here, but will be furnished upon request. The saving in coal is estimated to amount to 20 to 25 kroner per ton.

The possibility of using the Albenielsen process for the manufacture of sulphite seems to depend on the development of piping that can withstand the corrosive action of sulphite liquor. This evidently is the mechanical difficulty mentioned in connection with the Morterud process. Mr. Nielsen claims that European steel mills have developed such piping, so that his process may be used for sulphite production also.

Based on experiments at the Faldeby Cellulose Fabrik, the Albenielsen system in actual operation compares with the direct and Morterud system as follows:

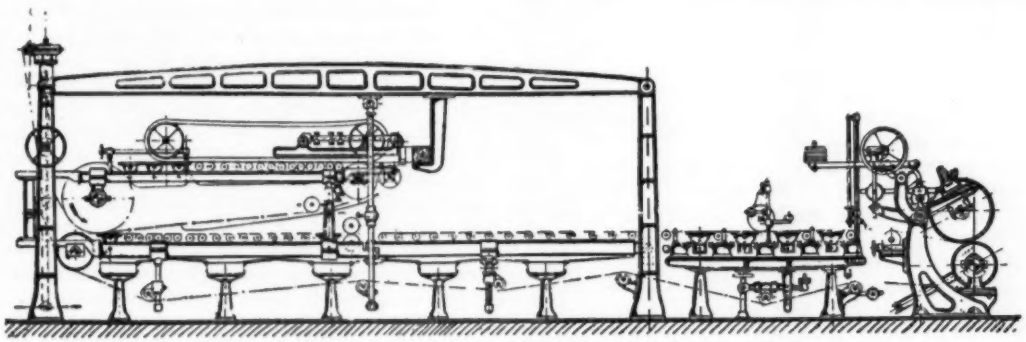
	Direct	Indirect Morterud	Albenielsen
Steam consumption per ton of pulp.....	2903 kg.	3239 kg.	2473 kg.
Net steam consumption		2384 kg.	742 kg.
Heat return in percentage of live steam..		34%	180%
of direct steam..		26.4%	70%
Saving in steam in percentage of live steam		18%	74.4%
Heat value of black liquor per liter of liquor	763 kg.	914 kg.	1404 kg.
Percentage of condensate in liquor.....	19.5%	25.1%	36.4%
Increase in heat value of black liquor...		20%	84%

The Erkens Fourdrinier Machine

The German firm, I. W. Erkens, Duren, Rhl., is now offering a paper machine of the Fourdrinier type with more than one wire, which makes it possible to combine two or more webs on the Fourdrinier machine.

[1] Pulp and Paper Attache, Bureau of Foreign and Domestic Commerce, Oslo, Norway.

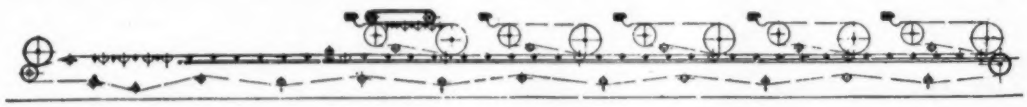
It is claimed that the quality of the paper made on this machine closely approximates hand made paper, in fact, the process is described as a direct imitation of the artisan paper maker who stood before his tub and dipped his wire frame into the stock, shaking it back and forth, so that the fibers formed a web of several thicknesses. The extra wire, which might be called a second wet end, is placed above the regular wire. The web from it comes down on the web on the regular wire, so that two webs are combined. By using a dandy roll on the upper wire, the watermark shows a shaded effect in the finished paper. At the same time tear, stretch and folding qualities are the same in either direction of the sheet.



ERKENS' FOURDRINIER WITH ONE EXTRA WIRE

On of these machines is in operation in Holland with a width of 1.5 meter and a production of 100 kilo per hour.

The same machine can be built with several upper wires, so that three or more webs can be combined into one, which is of special advantage in cable insulating and cement sack papers, in fact in any grade, requiring equal tear and stretch in either direction of the sheet. The principle of this machine is described as a cylinder machine with more than one cylinder stood on its head. It is said to have greater speed and lower operating costs also, with none of the disadvantages of the cylinder machine process. If such a machine is practical, it might also eliminate the necessities of the pasting operation in the manufacture of cardboard.



ERKENS' FOURDRINIER WITH SEVERAL EXTRA WIRES

New Method for Making Decorated Papers

The I. G. Farbenindustri H. G. Frankfurt A/M, Germany, has received a patent on a method of making decorated papers which is quite similar to the Erkens, "Upper Wire" machine. Reference is made to the previous method of dropping colored matter on the web while it is being forced on the Fourdrinier wire, which has the disadvantage that the application may be uneven, and cause blot-like spots in the finished paper. This is said to be avoided with the new method, which consists of a separate apparatus placed above the Fourdrinier wire, where such coloring matter is mixed thoroughly, suspended in stock and taken to the regular web by means of a wire. Beautiful design effects are said to be possible with this process, which has been patented under D.R.P. 473092.

Multiple Press Rolls for M.G. Machine

Erik Alexander Oehlin and Frans Oskar Carlson, of Hyltebruk, Sweden, have secured patents on a paper machine with one drier, having two or more press rolls with separate bottom felts but with the same top felt. The claim is made that this arrangement makes it possible to increase the speed on the machine because the web reaches the drier with a lower moisture content than before; in addition, there is a saving in the cost of felts, because they need not be subjected to such high pressure.

American Paper Machinery Expands

GLENS FALLS, N. Y., September 3, 1929.—The American Paper Machinery and Engineering Works are enlarging their new factory and installing additional equipment to take care of the greatly increasing demand for APMEW paper mill machinery. This demand exceeded the capacity of their factory, new built last year, and they have been assisted by the Glens Falls Machine Works and Sandy Hill Iron and Brass Works in taking care of their customers.

At the recent annual stockholders meeting a review of their business for the past year was read, and it was noted that their business had expanded to an international scope. Fifty one APMEW Timken Screens have been sold in Sweden, Finland, Germany, France, Japan, Mexico, Canada and United States. Fifteen of these screens were repeat orders which is an interesting record for the first year's business. Eight APMEW Timken Centrifugal Stock Pumping Systems were sold during this time and also several APMEW Stock Valves. Four APMEW Uniform Quantity Centrifugal Stock Pumping Systems were sold, three being repeat orders.

Included in this first year's operation is their resale business of Allis-Chalmers Manufacturing Company Texrope Drives and Electric Motors, Farrel-Skyes Reduction Gear Drives, Cleveland Worm Gear Drives, Timken Roller Bearings, Screen Plates, etc.

They have been ably assisted in enlarging their business to an international scope by their foreign representatives and builders: Paper Mill Equipment Limited, Montreal, Canada; Karlstad Mekaniska Verkstad, Karlstad, Sweden, and J. M. Voith Co., Heidenheim, Germany. These large foreign companies have joined the APMEW Equipment to their products which is an indication of the excellence of the American product.

With this present expansion the American Paper Machinery and Engineering Works will be able better to serve their customers.

Fritz Grunwald Now With Consolidated

Fritz Grunwald, formerly chemist in the Container Corporation Research Department, is now with the Consolidated Paper Company, of Monroe, Mich.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Nitric Acid

Digestion of Beech Wood with Nitric Acid. Herman Suida and Hans Sadler. Papierfabr. 25, Fest. u. Ausland Heft, 93-97 (1927). A brief review is given of pulp-producing processes utilizing nitric acid. Superior penetration of beech wood is obtained by cutting the material into longitudinal strips 1-2 mm. thick and then immersing them in nitric acid of the correct concentration at the ordinary temperature for 2-3 hours. The acid is then poured off, the chips are put in a digester and kept at 79° in a water bath for an hour. The chips do not loose their structure until, after washing, they are treated with a hot 2 percent solution of sodium hydroxide. A 15 percent nitric acid solution was found to give the best results. The consumption during the cooking process amounted to about 30 percent of the weight of the wood. The pulp yield was about 40 percent and the alpha-cellulose content of the product was 85 percent and its copper number varied from 2.3 to 3.1. A pulp of higher quality can be prepared by a treatment with 9 percent sodium hydroxide solution.—C. J. W.

Digestion of Plant Material with Dilute Nitric Acid. P. Krais, K. Blitz and O. Renner. Papierfabr. 25, Fest u. Ausland Heft, 45-60 (1927). From 400-900 kilograms of straw, reeds and similar material have been successfully digested using dilute nitric acid but the consumption of chemicals was somewhat larger than with laboratory experiments. The copper numbers of the pulps were not higher than 2.7 and the alpha-cellulose content (Jentgen method) varied from 70 to 86 for bleached pulps, which figures are comparable with sulphite pulp. Small amounts of hydrocyanic acid are produced in the process, accompanied by nitrogen oxides.—C. J. W.

Beating

The Rod Mill and its Applications. W. Schmid. Papierfabr. 26, Fest. u. Ausland Heft. 41-43 (1928). The apparatus and uses to which it has been put in the American pulp industry are described. Schmid thinks that it offers most promise as a refiner for screenings.—C. J. W.

Foaming of Paper Stock. H. Roschier. Papierfabr. 25, 211-213 (1927). The theory of foam formation is discussed A pure sodium abietate solution, to which aluminium sulphate has been added, does not yield foam at pH 4.6-5.8. The abietic acid at this pH is in the form of the aluminium salt, which is difficultly soluble in water. Aluminium sulphate does not influence the surface tension of water. Commercial rosin always yields a foam over the above pH range, increasing with increase in Hydrogen ion concentration. The foaming is least at pH 4.5-5.5 when glue or gelatin (even as low as 0.09 percent) is added as a protective colloid. Sources of foam in paper stock are: fillers, sizing agents, improperly washed stock containing bleach residues, unbleached pulp containing traces of waste sulphite liquor, aluminium sulphate after hydrolysis, etc. Often the addition of another colloidal substance to a foaming solution decreases the amount of foam by displacement from the surface of the solution.—C. J. W.

Storage of Beaten Stock. W. Schmid. Papierfabr. 25, 20-22 (1927). Neutral, hygroscopic substances may be added to paper stock in a kollergang to prevent the disintegrated material from becoming hard on storage.—C. J. W.

Chlorinating for Prevention of Slime. V. M. Coates. Mathieson Alkali Works. Paper Mill 51, No. 45, 2, 25, Nov. 10, 1928.—Experience obtained from numerous installations now in operation in various mills has shown that trouble from slime can be completely eliminated by judicious chlorinating treatment. A careful analysis of the stock and water flow of each mill is necessary in order to determine the most effective points of application, which vary in different cases (raw water, white water, paper machine head box, etc.). In most cases application at one point is sufficient; but in exceptional cases application at two points may be necessary.—A. P.—C.

Beater. H. D. Martindale. U. S. pat. 1,680,912, Aug. 14, 1928.—The object of the invention consists of providing a simple apparatus, used in connection with an ordinary stock beater or breaker, preferably equipped with a perforated backfall, for removing junk from the stock in process of reduction. The means for removing the junk consists of a channel formed in the bottom of the beater tub on the receiving side of the beater roll, and extended through the midfeather, across the bottom to the opposite wall of the tub, and upwardly outside the wall to the floor level. Heavy foreign substances settle in the bottom of the channel. A series of buckets on an endless chain, directed over wheels supported on an overhead structure, traverses the channel and scoop out the junk and deliver it in a perforated container where it is sprayed with water to recover the good pulp and return it to the beater.—A.P.-C.

Jordan Engine. H. R. Harrigan assignor to E. D. Jones & Sons Co., U. S. pat. 1,681,935, Aug. 28, 1928.—The bars in the shell. To prevent the stock fibers from catching on the ends the full length of the sheet and other bars are shorter, one shorter bar being placed on each side of the longer bars, and the shorter bars being placed towards the large end of the shell. To prevent the stock fibres from catching on the ends of the short bars, these ends are bevelled, and preferably the ends of the long bars are also bevelled, this bevelling sloping from the intake end toward the outlet end of the shell. The bars are bevelled to plane level with, or slightly below, the working surface of the filler strips interposed between the bars. As the engine is used the grinding bars wear down, and to present a sufficient height of bar for proper refining action the wooden fillers have to be lowered. In order that this may be done very quickly, the filler is made of a built-up portion formed of layers which can be removed. The fillers are formed so that they overlap the ends of the bars, so that no pockets or voids are formed which will catch the fibres and form "strings". The filler bars are preferably sectional, the ends abutting closely to prevent the formation of voids or pockets between their ends.—A. P.-C.

Beating Engine. J. D. Haskell assignor to Dilts Machine Works, Inc., U. S. pat. 1,683,546, Sept. 4, 1928.—The openings through which the shaft passes through the side walls of the tub are provided with rubber diaphragms of sufficient area to extend some distance beyond the edges of the openings, the marginal edges being secured by clamping rings bolted to the inner faces of the vat walls. Around the central opening of the diaphragm is a sectional gland box forming a packing gland tc permit free rotation of the shaft and prevent leakage of stock. A flexible steel cable doctor is adjustably bolted to a doctor plate so that its free edge may project into the path of movement of the outer edges of the fly bars. The upper end of the discharge

conduit is embedded in the concrete bottom of the trough at its lowest point and is provided with a top plate forming a continuation of the bottom of this portion of the trough. It is provided with a discharge opening which is controlled by a valve hinged to the underside of plate at one side of the opening to swing downwardly and sideways from its closed position; a portion of the valve is adapted to enter the opening when closed, while the underlying portion is somewhat larger and engages a packing ring to make a liquid-tight joint. A nozzle connected to high-pressure water line is embedded in the concrete at one end of the trough to discharge flushing water just above the floor of the trough, the end of the nozzle being flattened and flaud to form a fan-shaped stream spreading out to the sides as well as along the bottom of the trough. The cover plate for the bedplate box is held in closed position by a pair of cam levers, affording an expeditious means for clamping and releasing the cover.—A.P.-C.

Pulp Beater. L. M. Avenson. U. S. pat. 1,683,597, Sept 11, 1928.—In a beater to which the pulp is fed by gravity or by means of an air current, in order to prevent the escape of dust and fine fibers the dry pulp is fed directly in front of the beater roll. The portion of the beater into which the pulp is discharged is provided with a hood forming a totally enclosed chamber provided with a vent to permit the escape of the air used to carry the pulp; across the vent is a screen on to which water is sprayed to prevent the escaping air from carrying off any of the dust or the fibers. To avoid obstructing the pulp mass within the beater tub, the wall of the receiving chamber which extends down into the trough is constructed in the form of a curtain which can be raised as the level of the stock in the beater rises, the edge of the curtain being kept just below the level of the stock.—A. P.-C.

Roll for Beating Engines. H. R. Simonds assignor to The A. A. Simonds-Dayton Co., U. S. pat. 1,684,521, Sept. 18, 1928.—The invention provides beater bars containing about one-third the amount of metal required to make the ordinary fly bars, so that they can economically be made of acid and rust-resisting steel. They are held in position by metal (preferably malleable iron) staves constructed so as to permit of easy replacement of the bars and to afford ample support to the fly bars. The staves can be either screwed into the heads of the roll, or fitted into slots in the heads and held in position by metal bands which are shrunk by placing hot and allowing to cool. These bars and staves can be fitted to existing beater rolls.—A. P.-C.

Controlling Device for Conical Pulp Refining Engines. A. J. Loman. U. S. pat. 1.686,217 Oct. 2, 1928.—The position of the plug of Jordan refiners is adjusted and automatically kept constant by forcing the plug towards the shell by means of fluid pressure which is automatically maintained at a predetermined value and which may be varied as required. The construction is such that the plug is practically "floating" when the machine is running normally, so that the knives will not be deteriorated if lumps of pulp, etc. pass through the machine. It also automatically takes up any wear in the knives of the plug and of the filler.—A. P.-C.

Pulp Beater. L. E. Randecker assignor to Hammermill Paper Co., U. S. pat. 1,689,932 Oct. 30, 1928.—The invention comprises a beating engine which includes a tub or vat of the usual capacity, but relatively much smaller in its horizontal dimensions, so that a considerable saving in floor space is obtained. After passing between the roll and bedplate instead of being circulated in a trough as in the usual type of beater, the stock is pumped to a considerable height from which it is delivered back between the roll and bedplate. Preferably the elevation through which the stock passes by gravity to the beater roll is such as to cause the falling material when it reaches the roll to have a velocity equal to the peripheral speed of the roll. Just prior to allowing the stock to fall back into the beater, it is passed over a screen which removes a considerable amount of water, so that the stock is beaten at high density. The water removed is returned to the beater just back of the roll, and as it falls from a considerable height it produces thorough agitation of the stock and, at the same time dilutes it to a consistency suitable for pumping.—A. P.-C.

Wood and Pulp Mucilage. Carl G. Schwalbe. Papierfabr. 25, 481-485 (1927). Mucilage formation from mechanical pulp depends not only on the composition of the wood but also on the grinder pressure, the sharpness of the stone, the density of the pulp, the temperature, etc. Hemicellulose, pectins and substances closely allied to sugars and cellulose are the best mucilage-formers in wood. Freshly cut wood can be converted into mucilage more easily than stored wood. Lignin is not a good mucilage-former. Mitscherlich pulps are superior to Ritter-Kellner pulps in the manufacture of mucilage. Its formation is facilitated by bacterial action, overcooking, overbleaching and by the addition of certain chemical substances to the beater, such as lithium chloride and calcium sulphocyanate. The solubility of cellulose mucilage in 16 percent sodium hydroxide solution, its precipitation from this solution and the determination of the height level in a tube after centrifuging indicate the degree of beating of the stock. The most important property of pulp mucilage for paper manufacturers is its ability to weld the fiber together while moist. This is favored by pressure and careful drying, the latter being done on both sides of the sheet at the same time to avoid the loosening of the felting of the fibers.—C. J. W.

Bleaching

Recent Bleaching Processes for Pulp. J. Funcke. Papierfabr. 25,221,228 (1927)—A review of American patents covering process for bleaching pulp during the last ten years.—C. J. W.

Production of Sulphite Pulp. II. Bleaching. Lad. Rys. Chem. Obzor 1, 364-368 (1926)—The bleaching of the sulphite pulp is briefly described and the possibilities of a further development are described. Citing the respective literature, Rys then mentions the chemical theories and the methods of examination of the chemical and mechanical control with reference to the newest processes.—C. J. W.

Danger of Explosion in the Manufacture of Bleach Liquors from Liquid Chlorine. E. Schronberg Papierfabr. 25, 581 (1927).—An explosion resulted in a cast iron tower covered with asphalt in which a calcium hydroxide solution was treated with chlorine, countercurrent flow. The cause is attributed to the supercooling of the mixture owing to insufficient warming of the chlorine before passing into the solution. The decomposition of calcium hypochlorite to chlorate and chloride is without danger; the reaction $C_a(OCl)_2 = C_aCl_2 + O_2$ occurs in an explosive manner, especially in the presence of catalyzers such as phosphorus, arsenic, sulphur, ferric oxide, etc.—C. J. W.

Explosion Risk in the use of Liquid Chlorine for Bleach Liquor. H. Kirmreuther and L. Purrmann. Papierfabr. 25, 698 (1927). This is a reply to Schonberg, in which the supposed cause for an explosion was the formation of solid calcium hypochlorite and its decomposition to oxygen and calcium chloride is refuted from a chemical and a thermal standpoint. One kilogram of chlorine gas sets free 290.7 calories in bleach liquor manufacture. This heat warms the solution as the heat of vaporization at 8° C for 1 kilogram of chlorine is only 62.7 calories—C. J. W.

The Preparation of Bleach Liquor from Liquid Chlorine. Hans Wrede. Svensk Pappers-Tidning. *31* 15-18, 44-47 (1928). A review, written in German, of various methods of preparing bleach liquors from liquid chlorine and lime or sodas. The process used to the greatest extent in the U. S. is the Mathieson system, using lime. The process is not continuous, demands careful attention, requires large floor space and the equipment is relatively expensive. A similar process described by Müller in "Die Papierfabrikation and deren Maschinen" has the same disadvan-

tages. The Deutschen Solvay-Werke, D. R. P. No. 368,736, uses a continuous system which produces a bleach liquor of any strength up to 45 grams per liter active chlorine. In D. R. P. No. 396,193 is described a process which has found favor in the textile and paper industries because of its simplicity of operation and low cost of installation. The equipment is provided in sizes to produce from 4 to 30 Kg. hypochlorite per hour at concentrations of from 15 to 25 grams per liter active chlorine. Either caustic soda or soda ash may be used. The chemistry of the process using soda ash is described. Complete chlorination produces HC10 whose action may be too violent in certain cases, or the action of the hydrochloric acid formed during the bleaching may harm the fibres. An excess of alkali is required in case acidity is to be avoided. Each process is described in detail with diagram of the equipment. For operating details consult the original. A table shows the relative costs under the following conditions; Chlorine with soda ash, solution acid, neutral with Na_2CO_3, alkaline with Na_2CO_3, neutral with Na OH, alkaline with NaOH, alkaline with CaO_3, chlorine and lime, solution alkaline with CaO; solution prepared from solid bleach powder.—C. E. P.

The use of Liquid Chlorine for the Preparation of Bleach Liquors. J. Naiman. Papier 31, 1155-1157 (Nov. 1928).—A brief illustrated description of a plant installed in a German mill (not specified) which has been found satisfactory.—A.P.-C.

Multiple Stage Bleaching. Anon. Pulp Paper Mag. Can. 26, 165 (Nov. 22, 1928).—A brief discussion of the merits of the Thorne bleaching system.—A.P.-C.

Bleaching of Sulphite Pulp. R Bergqvist. Papierfabr. 26, 593-604 (1928).—A method for determining the hydrogen ion (pH) values of bleaching solutions is described. The effect of changes of reaction in hypochlorite bleaching baths on the nature of the bleached pulp is examined. The mechanism of bleaching is discussed on the basis that chlorination and oxidation occur simultaneously to extents which may be partially controlled through the reaction of the liquor. During bleaching there is a progressive change of reaction toward the alkaline side. Alkaline bleaching favors the production of the whitest pulp. The hydrochlorite ion is the chief bleaching agent, free undissociated hypachlorous acid having little bleaching power and chlorine having not only a poor bleaching effect but a definitely injurious action on the cellulose. In alkaline bleaching liquors the hypochlorite ion is preponderant. Analysis of pulps bleached in baths of varying reaction shows that the alpha-cellulose content, viscosity and copper number are affected by change in reaction. Regions of maximum changes in these values are similar, increased copper number and alpha-cellulose content tending to correspond with decreased viscosity and *vice versa*. Two well defined maximum ranges occur, one on the alkaline and one on the acid side of neutrality.—C. J. W.

Bleaching of Wood Pulp. VI. The Effect of Bleach Ratio on the Color, Reaction Rate and Chemical Composition in Bleaching Sulphite Pulp. P. K. Baird, Forest Products Laboratory, Madison, Wisconsin. Paper Mill 51, No. 45, 9-16, 44 (Nov. 10, 1928) Paper Trade J. 87, No. 22, 39-44 (Nov. 29, 1928) —In a study of the effect of the variation of the bleach ratio and independent factors in the bleaching of sulphite pulp, using a constant temperature of 35° C. and constant agitation of 5.06 revolutions per minute of the bleaching apparatus it was found that within the range of variables studied: (1) with respect to the effect of variations of bleach ratio on color: (a) the higher the bleach ratio the whiter and higher the final color by either the complete exhaustion or the excess chemical method; (b) the higher color-removing efficiency obtains in the complete exhaustion method. (2) with respect to the effect of variations of bleach ratio on the reaction rate: (a) in all cases the chemical consumption is a function of the logarithm of the time up to 90% consumption of chemical; (b) the rate of reaction is approximately proportionally higher for higher bleach ratios. (3) with respect to effects on chemical composition: (a) the higher the bleach ratio the greater the degradation of the cellulose as indicated by the lower alpha-cellulose value and the higher copper number, the higher 1% caustic soda solubility, and the higher beta-and gamma-cellulose values, especially beyond the point of bleachability; (b) the best guides to proper bleaching of a pulp are the alpha-cellulose value the 1% caustic soda solubility, and the copper number, in the order given. (4) in general relative to bleaching; (a) the "consistency effect" is probably the result of increased chemical ratio and concentration, associated with accentuated surface action caused by the rubbing together of the fibers; (b) the excess chemical method of bleaching may be the more economical in practice, if it is properly controlled, and if proper conditions, chosen through a careful economical study after technical data are available for the particular pulp, can be maintained.—A. P.-C.

Bleach Studies on Wood Pulps. IV. The Influence of Metals and Metallic Salts on Hypochlorites and the Bleaching Process. Herman Wenzl. Papierfabr. 25, Fest U. Ausland Heft 76-85 (1927). A large number of metals effect a catalytic decomposition of hypochlorites into chlorides and oxygen. The activity of the metals differ widely. Aluminum, lead, zinc and iron are not as effective as manganese, cobalt and nickel. The reaction velocity decreases with increase in hypochlorite concentration and become constant. Velocity is also retarded by increasing the hydroxyl ion and is accelerated by elevating the temperature. The rate of reaction must be adjusted so as to produce a unform bleaching action without destroying the fiber. In industrial operation the catalyzer may be suspended as the metal or added in the from of a salt in the bleach mixture. Analyses of pulps bleached in this way showed lower copper numbers and higher alpha-cellulose values than pulps bleached in the usual way.—C. J. W.

Sizing

Valuation of Rosin by its Physicochemical Constants. I. V. Filipovich and N. V. Tukhovitzkii. J. Chem. Ind. (Moscow) 4, 875-880 (1927). A detailed abstract is given in Chemical Abstracts 22, 3541-3542.—C. J. W.

Surface Sizing. H. Postl. Papierfabr. 25, 115-117 (1927). A brief description of surface sizing practice in the paper industry. —C. J. W.

The Effect of Heat on Rosin Sizing in the Drying of the Wet Paper Sheet. E. Oman Svensk Pappers—Tidn. 31, 536-9, 570-2 (1928) Pulp Paper Mag. Can. 26, 1631-1656 Nov. 22, 1928.—Samples of pulp were sized according to a standard procedure and the wet hand sheets were heated between two iron plates in a temperature controlled oven for predetermined periods and then air dried. The degree of sizing was determined by the "ink streak" method. The effects of the sizing variables were determined; temperature, time of heating moisture in the sheet, and the hydrogen ion concentration (pH) of the sized pulp. The critical temperature was found to be 73°-75° C. and the critical moisture content about 50%. Higher values had a harmful effect on the degree of sizing unless the heating time was very short—less than one minute. The shorter the heating time the better the sizing in all cases. pH had no effect on sheets air dried only, but pH=5.0 was found to be the best conditions for sheets with 75% moisture heated to 85° C. for either 15 or 30 seconds. Alkaline conditions (pH=8.0 gave extremely poor results.—C. E. P.

Sizing Paper. L. F. C. Girardet. Fr. pat. 635. 419, June 2, 1927.—The surface of paper is rendered more capable of absorbing the colloidal resin by adding an electrolyte such as aluminum sulphate. A colloidal solution of resin is obtained by passing caustic soda or sodium carbonate through it.—A.P.-C.

Advance in Sizing Paper and Pulp (With Wax). E. Belani. Papierfabr. 26, Amt. und Wirtschaft. Teil, 485-487 (1928).—The advantages of wax sizing are enumerated and practical suggestions for the application of the trade-named product "Prestokoll" are given.—C. J. W.

Fall Meeting of TAPPI Features Historic Richmond Paper Mills

Aside from the extremely interesting political history of Richmond, Virginia, the meeting place of the Technical Association on September 24 to 26 this city has an industrial story that pulp and paper makers will like to know.

The Old Records Searched

This story has been recently told in *Superior Facts*, a publication of the Paper Makers Chemical Corporation and was prepared after a very thorough research investigation had been made through the records of the paper mills of Richmond and the Virginia State library.

Richmond, Virginia, a gateway city between the North and South, rich in its manufacturing interests and beautiful homes is an ideal location for paper manufacturing, converting and distribution, and accordingly the industry has grown and prospered on the banks of the James.

The first record of paper making in this city is found in the reports of the Virginia State Legislature of Feb. 17th, 1834. An act to incorporate The Franklin Manufacturing Company of Richmond for general purposes of manufacturing, chief of which were the making of paper and cotton, wool and iron products. Books of subscription opened under the superintendence of Richard Anderson, Henry W. Moncure, Conway Robinson, James E. Heath, Thomas Ritchie, Isaac Davenport, Henry Clarke, R. I. Smith and Samuel Shepherd. The rules for the election of officers (five directors and a president) are given, but the names of the officers are not given.

In 1845, Ellyson's Business Directory and Almanac mill at the corner of Arch and South Eighth Streets. The Franklin Paper Manufactory, John Richards, Agent. Little further can be found regarding this mill until 1848 when, according to State records, The Belvedere Manufacturing Company was incorporated for "the purpose of manufacturing cotton, wool, paper and iron, or other articles." Isaac Davenport, Royal Parish, John Richards, Robert Edmonds, James Allen and James C. Crane were the founders of the company, taking over the old Franklin Mill. The Richmond Directory of 1850 reports mill equipment of eight engines (beaters) and three machines, employing forty or fifty hands, making printing, letter, cap, envelope and wrapping papers and having a sale value of $50,000.00 per annum. An old Chamber of Commerce item reports it as The James River Mill making blotting papers and that it had made paper on which Confederate Bank notes were printed.

To the west of this mill stood the old Confederate Arsenal, and with its destruction by fire and explosion at the time of the evacuation of Richmond in 1865 the mill was so damaged that it remained useless for several years. Capt. Thomas Whitfield at this time was interested in or owned this property, and his heirs, consisting of a son, John F. Whitfield, a daughter, Mrs. E. A. Jones and a son-in-law, A. H. Christian, Sr., (according to the old minute book still in existence) organized The Richmond Paper Manufacturing Company, took over the old mill property for $20,000.00, rebuilt the mill and installed a 66-inch cylinder machine. J. H. Montague who operated a sash and blind factory next to this mill became interested and acted for some time as its Secretary and Treasurer. William Allegre was President.

The paper mill drew its water power from the old Kanawha Canal, discharging it to the wheels of the Montague Sash and Blind Factory and, after being used for the second time for power, the spent water emptied into the James River.

In 1874, J. H. Montague, E. D. Christian, Moses Ellyson, R. S. Archer, John Whitfield and Samuel Sinton were mentioned as directors, and in 1877 H. W. Lubbock, a local rag dealer, was made Secretary and A. H. Christian, Jr., Assistant Secretary.

TAPPI Fall Meeting Program Richmond Washington

TUESDAY, SEPTEMBER 24

8:00 a.m. Registration—Hotel Jefferson.
9:30 a.m. General Session—P. H. Glatfelter, Chairman.
Committee Reports.
TAPPI-APPA Fellowship Report.
Paper: "What is Patentable in Paper Making?" by C. W. Rivise;
"Roll Winder Developments," by J. A. Cameron.
1:00 p.m. Luncheon—Hotel Jefferson.
2:30 p.m. Visit to mills:
Albemarle Paper Company.
Standard Paper Mfg. Company.
Manchester Paper Board Company.
7:00 p.m. Dinner and Dance—Hotel Jefferson.

WEDNESDAY, SEPTEMBER 25

9:00 a.m. Pulp Evaluation Symposium—D. E. Cable, Chairman.
"Modern Recovery Practice," by C. L. Wagner.
"A New Sectional Speed Regulator for Sectional Paper Machine Drives," by R. R. Baker.
"Strength Tests for Pulp," by H. C. Bradford.
"The Beater Method of Evaluating Pulp," by H. A. Rothchild.
"Estimating Pulp Quality," by J. E. O'Connell.
1:00 p.m. Luncheon—Hotel Jefferson.
2:30 p.m. Visit Paper Mills:
Hummel-Ross Fibre Company, Hopewell, Va.
7:00 p.m. Banquet—Hotel Jefferson.

THURSDAY, SEPTEMBER 26

9:00 a.m. Paper Standards Symposium—B. W. Scribner, Chairman.
"Paper Making Research," by M. B. Shaw.
"Paper Standards," by F. T. Carson.
10:00 a. m. Shrinkage Symposium—Allen Abrams, Chairman.
"Recent Developments in Domestic Clays for Coating and Loading," by O. W. Callighan.
"Shrinkage," by A. T. Taylor.
"Shrinkage Reduction," by D. K. Pattillo.
1:00 p.m. Luncheon—Hotel Jefferson.
2:30 p.m. Visit to Mills:
Chesapeake Corporation, West Point, Va.

FRIDAY, SEPTEMBER 27

Buses leave Wardman Park Hotel, Washington, D. C., at 9:30 a.m. for visits to the Paper Section of the U. S. Bureau of Standards and the District of Columbia Paper Mills. Lunch will be served at the U. S. Government Printing Office after which the Printing Office departments will be visited.

This mill once made manilla paper that was converted into flour sacks locally and used locally, as Richmond was in the late "seventies" a large flour producing center, having the largest flouring mill in the country. The Richmond Paper Manufacturing Company in the beginning made all rag papers, but later made news print, book, colored poster and blotting paper, the latter product establishing a prominent reputation for the mill. The mill's first superintendent was W. B. Allegre. He was followed by a Mr. Moore, Albert Sullivan Bacon, Charles Mickels and John Mowry.

After the death of the president, Andrew H. Christian, in 1913 manufacturing was discontinued, the mill dismantled and the machinery sold. The equipment consisted of one 62-inch and one 96-inch Fourdrinier machines, the latter going to the then new Russell Falls Paper Company (now The Westfield River Paper Company) at Russell, Mass. The real estate was sold to the Atlantic Coast Line Railroad for the extention of its yards, the mill buildings being entirely removed. The blotting paper brands, raw material and finished paper were taken over by The Standard Paper Manufacturing Company of Richmond.

The Richmond Paper Manufacturing Company, in addition to its manufacturing, conducted a wholesale paper business which has been continued under a new organization, the Richmond Paper Company, Inc., under the management of B. W. Lipscomb, one of the leading paper distribuors of the South. Prior to the closing out of the manufacturing business, the officers of the corporation were: Andrew H. Christian, president; B. W. Lipscomb, secretary and manager, and R. G. Thornton, manager of sales.

The Linton Coated Paper Co.

About 1895 the Richmond Paper Manufacturing Company became interested with Joseph Linton of Rhode Island and started the Linton Coated Paper Company at the corner of Thirteenth and McDonough streets, Manchester, in a building formerly used as a tobacco factory. Here was produced their coated blotter stock. This business was also taken over by the Standard Paper Manufacturing Company in 1913.

The Virginia Paper Co.

About 1884 James H. Montague left the Richmond Paper Manufacturing Company and with M. F. Montague started the Virginia Paper Company. This was mentioned in the Richmond Directory of that date as a paper mill. Possibly it was intended to manufacture paper, but there is no evidence that they did other than operate as wholesale and retail paper dealers.

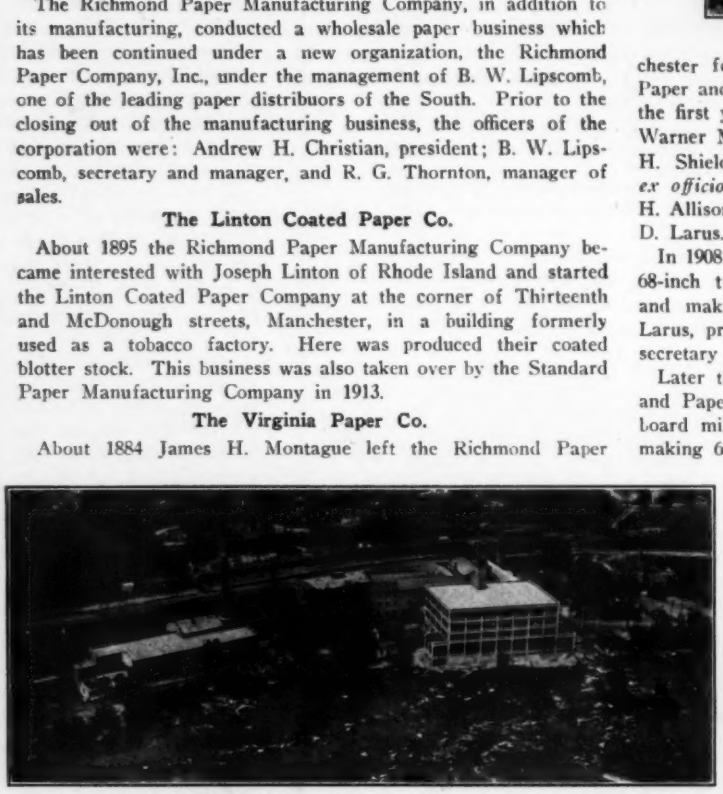
The Manchester Board and Paper Co.

In Manchester, just across the James River from and now a part of Richmond, the Manchester Paper Company, in 1863, built a mill equipped with a 66-inch cylinder machine to make manilla tissue. J. B. Wortendyke, from Wortendyke, N. J. (probably the first place in the United States to make twine from paper), started the operation of this mill, equipping it with paper spinning machinery to make twine. Mr. Wortendyke was president of the corporation, J. H. Shields, secretary, and Thomas H. Wallace, general agent. After the death of Mr. Wortendyke the business was carried on by his son, David L. Wortendyke, and two daughters, one of whom was married to J. H. Shields. Shortly after David L. Wortendyke withdrew to start a similar business in Richmond. In 1890 an ice jam partially wrecked the plant and soon after fire destroyed it. The mill was promptly rebuilt May 30, 1891. According to records, charter was granted in 1900 by the Judge of the Husting Court of the City of Manchester for reorganization under the name of The Manchester Paper and Twine Company. The names of the officers, who for the first year were to manage the affairs of the company were: Warner Moore, president; Harry B. Owen, vice president; John H. Shields, secretary and treasurer. Directors, the foregoing *ex officio* and the following: Francis M. Whittle, Jr., William H. Allison, Edward Leake, Joseph N. Cullingsworth and Charles D. Larus.

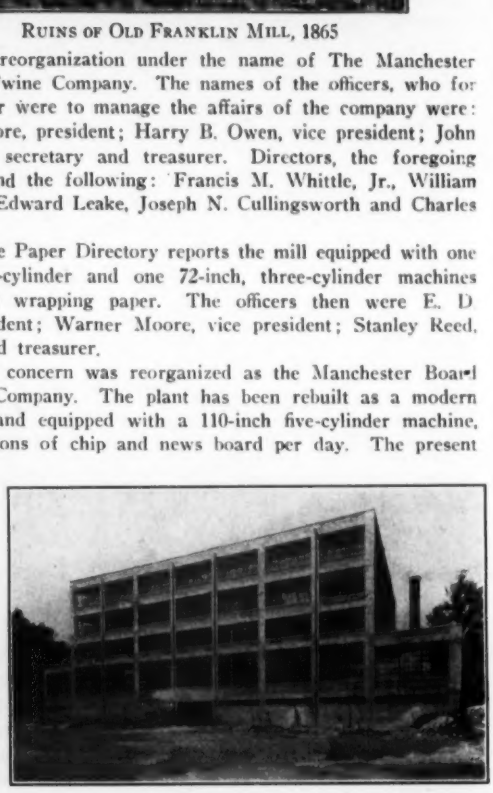
RUINS OF OLD FRANKLIN MILL, 1865

In 1908 the Paper Directory reports the mill equipped with one 68-inch two-cylinder and one 72-inch, three-cylinder machines and making wrapping paper. The officers then were E. D Larus, president; Warner Moore, vice president; Stanley Reed, secretary and treasurer.

Later this concern was reorganized as the Manchester Board and Paper Company. The plant has been rebuilt as a modern board mill and equipped with a 110-inch five-cylinder machine, making 60 tons of chip and news board per day. The present organization consists of Warner Moore, president; F. E. Brown, secretary; Ross Puette, general manager.



AERIAL VIEW OF HOLLYWOOD AND RIVERSIDE MILLS



ALBEMARLE'S RIVERSIDE MILL BUILT IN 1925

The Wortendyke Mfg. Co.

After leaving The Manchester Paper Company, David L. Wortendyke and Thomas F. Jeffress organized the Wortendyke Manufacturing Company in 1889, to make paper twine. Starting with a capital of $20,000.00 they have grown until today they have a most up-to-date plant and equipment representing an investment of over $600,000.00. They are specialists in paper spinning, making twine for floor coverings, electric conduits, shopping bags, automobile trimmings, furniture cable filling and many other purposes. They also do a large business in packaging and distributing toilet paper and in the manufacture of paper bags.

The F. B. Exall Paper Mill

In 1877 or 1878 F. B. Exall operated a small mill in his own name. Its equipment consisted of one, one thousand-pound beater; three, three hundred and fifty-pound beaters and a 60-inch, two cylinder machine, making two tons of wrapping paper in twenty-four hours. Little is known of this mill and its existence probably was short. Ernest Taylor Walthall, in his book of old memories of Richmond, 1880, speaks of a paper mill burning at the foot of Thirteenth Street. This probably was the old Exall mill.

The Old Dominion Paper Mill

In 1880, on East Cary Street near Seventeenth street, James C. Smith built and operated The Old Dominion Paper Mill. Little can be found regarding this mill, except that its equipment consisted of one, one thousand-pound and one, six hundred-pound beaters and that they advertised the making of three thousand pounds per day of blotting, manilla and wrapping papers.

The Albemarle Paper Mfg. Co.

Probably no mill in America has a more picturesquely historical setting than the old, original Hollywood Mill. On the banks of the James River, just over the hill below the old historic Hollywood Cemetery, it takes its power from the Chesapeake and Ohio Canal, formerly the old James River and Kanawha Canal, early projected to connect the James River with the Ohio. George Washington was active in the engineering of this work and acted as President of the Company that built and operated it. Some masonry near the mill is still standing in a splendid state of preservation and is said to have been built under the personal supervision of Washington.

A. B. Thaw, a promotor, interested Richmond capital, organized the Albemarle Paper Manufacturing Company and built The Hollywood Mill in 1886, with Captain J. F. Chalmers as President and himself as Secretary and General Manager. Associated with Mr. Thaw was Alonzo Sadler, who had learned the paper business at the old McIlwaine Paper Mill at Petersburg, Va., but who just previously had been connected with the old Dominion Mill in Richmond. Mr. Sadler was superintendent, but did not stay beyond the time of construction. W. J. Slues, now connected with the Standard Paper Manufacturing Company, was the engineer in charge of the construction and

PLANT OF STANDARD PAPER MFG. CO. AT RICHMOND TODAY

equipment of this mill. The mill was started in 1887, making newsprint and manilla papers on a ninety-inch Fourdrinier machine.

Mr. Thaw soon resigned and was succeeded by James R. Ellerson. Soon after Charles M. Boswell, formerly the bookkeeper, became Secretary and Manager and Mr. Ellerson moved to Washington, D. C., where he engaged in real estate business. On the death of Captain Chalmers, Mr. Boswell was made President.

In 1888 the mill was changed over to make blotting paper and James Lishman, from Postlip Mills near Cheltenham, England, was secured as Superintendent, having learned the business under his father, Superintendent for Evans, Adlard and Company, Ltd., owners of the Postlip Mills. Mr. Lishman continued successfully until his retirement in 1903, when he returned to his native land. He was succeeded by John S. Mowry who remained until a few years ago when he was succeeded by Heth Owen, the present Superintendent. The Hollywood Mill is today making blotting, absorptive, filter and matrix papers.

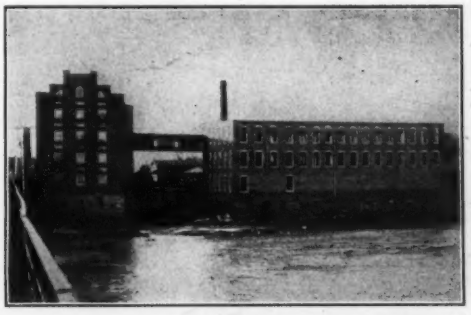
In 1907 Mr. H. W. Ellerson, a nephew of the former secretary and treasurer, took over the management of the Company. From this time on progress was rapid. He purchased the plant of

SECTION OF EXPERIMENTAL PAPER MACHINE IN EXPERIMENTAL PAPER MILL OF STANDARD PAPER MFG. CO.

The Dixie Paper Mills in 1919. This is now known as the Brown's Island Mill, which is now making kraft wrapping paper. In 1925 he built the Riverside Mill near the Old Hollywood Mill, equipping it with a ninety-four-inch Fourdrinier machine, making colored specialties, Albemarle covers and kraft specialties. Arthur M. Cherry is the present superintendent of the Riverside mill. In mention of this group, the mill at West Point, Va., of which Mr. Ellerson is President, should be included.

The Chesapeake Corp.

H. W. Nichols, President of The Fox Paper Company, of Lockland, Ohio, with his brother M. T. Nichols, organized the Chesapeake Corporation and built this mill, 1912-1913, at West Point, just East of Richmond at a navigable point on the York River. At first a pulp mill was built to make sulphate from the native pine to supply their kraft mill at Lockland. The pulp was run on a 110-inch two-cylinder machine, which was later converted into a paper machine for the making of heavy kraft wrappers. In 1915 it was rebuilt into a modern five-cylinder board machine. This plant has continued, however, chiefly as a pulp mill, the board manufacture being operated in conjunction with it.



ORIGINAL STANDARD MILL

Associated with Mr. Ellerson in the Chesapeake Corporation are Elis Olsson, J. Scott Parrish, W. C. Gouldman and J. H. P. Ekberg. The Superintendents of this mill were K. M. Thorsen, Frank Farrell, R. H. Laftman, Joseph Slater, W. Powers, John K. White.

Recently a new organization was formed and it will be known as the Albemarle-Chesapeake Corporation which will be composed of the combined board of directors of the two organizations, the Albemarle Paper Manufacturing Company and The Chesapeake Corporation. The Albemarle Chesapeake Corporation will

manufacture Kraft wrapping paper and Kraft Liner Board and will occupy a new mill which is now being built at West Point. This mill will house a machine that will make a 235 inch or 240 inch sheet.

The officers of the Chesapeake Corporation are: Elis Ollson, president; H. W. Ellerson, vice president; W. C. Gouldman, secretary and J. Scott Parrish, treasurer. The general superintendent is J. H. P. Ekberg and the superintendent of the board mill is J. K. White.

The officers of the Albemarle Chesapeake Corporation are: H. W. Ellerson, president; Elis Ollson, vice president; W. C. Gouldman, secretary, and J. Scott Parrish, treasurer. The office building of the Albemarle-Chesapeake Corporation has been completed at West Point, but the mill has not yet been completed.

The Dixie Paper Mills

M. E. Marcuse, R. A. Cauthorne, Richard Smith and Charles Baker and others built the Dixie Paper Mills in 1918, utilizing an old electric power house on Brown's Island. They equipped the mill with a 72-inch Fourdrinier machine which had been taken from the old mill then being dismantled in Marietta, Georgia. (This machine was mentioned in a previous issue of Superior Facts as originating in the "Old State Mill" at South Bend, Indiana.) With this equipment they ran a short time on wrapping paper.

The plant was taken over in 1919 by the Albemarle Paper Manufacturing Company who have built it over into a modern mill, replacing the old machine with one 112-inch and one 132-inch Fourdrinier machines for the making of kraft wrapping paper. It is known as the Brown's Island Mill. M. J. Guild was the original superintendent of this mill and was succeeded by R. H. Palmore, the present superintendent.

The Standard Paper Mfg. Co.

The Standard Paper Manufacturing Company, of Richmond, Va., was organized in 1901 by Richmond men and local capital

TAPPI RICHMOND MEETING COMMITTEE

FRONT ROW, LEFT TO RIGHT: A. L. Rothschild, Standard Paper Mfg. Co.; B. W. Coale, Albemarle Paper Mfg. Co.; B. K. Steadman, Standard Paper Mfg. Co.; J. A. Carter, Richmond Chamber of Commerce. BACK ROW, LEFT TO RIGHT: J. P. Massie, Albemarle Paper Mfg. Co.; G. A. Carlton, Standard Paper Mfg. Co.; H. S. Donald, Standard Paper Mfg. Co.; O. L. Schweickart, Bedford Pulp & Paper Co.

to engage in the manufacture of blotting paper. At that time the manufacture of blotting paper was comparatively small and was not a specialized field to the extent that it is in the paper industry today.

The organizers of "The Standard" first purchased The Old Dominion Cotton Mills, a picture of which is shown in this issue, and this building constituted their orignal plant. This mill had valuable water power rights in perpetuity and had not been operated as a cotton mill for many years. The "Standard Company" changed the cotton mill into a paper mill and in 1902 began the manufacture of blotting and absorbent papers.

The building shown on the left in the picture of the old mills in this issue was erected about 1800, being today more than one hundred and twenty-five years old. It is substantially constructed, the walls below the first floor being nearly six feet in thickness. The old bridge, a portion of which is shown on the left in the photograph, is the one over which, in 1865, the last remnants of

J. F. RYLAND, VICE PRES. STANDARD PAPER MFG. CO.
Chairman of the TAPPI Meeting Advisory Committee

the Confederate Army withdrew from Richmond in the glow of the burning buildings and to the sound of shells exploding in the arsenals and ammunition depots in the evacuated city.

W. J. Stiles was the engineer in charge of the reconstruction and conversion of The Old Dominion Mill into The Number One Mill of the present group of mills. A ninety-inch Fourdrinier was installed and the manufacture of blotting paper was started. The first Superintendent was James O'Brien who was soon succeeded by W. J. Stiles who is still with the company today as general superintendent. E. H. Neblett is the present superintendent of this mill.

In 1903, Number Two Mill was started as a coating plant to make enameled blotters and similar papers. Joseph Linton was its first superintendent, followed by John Schopp and later by Reginald Hunter, the present superintendent in charge. In 1913 The Linton Coated Paper Company was purchased from The Richmond Paper Manufacturing Company and the business all transferred and consolidated in Number Two Plant. As stated before, they took over the blotter brands, raw stock and finished paper of the Richmond Paper Manufacturing Company in 1913.

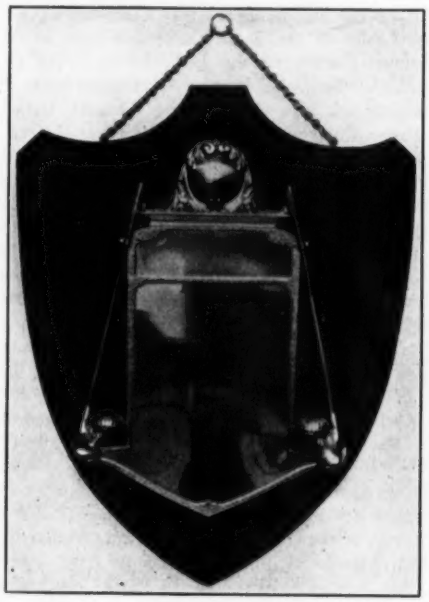
In 1920 they took over the plant formerly occupied by the Marshall Cotton Mills Company, converting it into Mill Number Three, a most up-to-date paper manufacturing plant with a 102-inch Fourdrinier, making high grade coating stock, "Standard Offset," and other high grade printing papers. A contract has just been let for an additional 120-inch Fourdrinier machine for this mill, which will more than double its capacity. This machine will operate an Offset book and will be operating this year. Carl Magnus (at one time in charge of the Fabrica del Papel de Maracay mill at Maracay, Venezuela, South America) started this division and is still its superintendent. A feature of this mill's operations, which is unique among paper mills, is a fully equipped experimental mill which is used to work out manufacturing problems and, on a semi-commercial scale, is open to the use of paper manufacturers or manufacturers of articles allied with the paper industry.

The officers of the "Standard" Company are: Robert S. Crump, president; James F. Ryland, vice president and general manager; W. L. Goodwyn, vice president and manager of sales. Both Mr. Crump and Mr. Ryland have served the company since its organization in 1901.

Richmond today, with its nearby towns of Hopewell and West Point, have no inconsiderable production of paper of various grades.

Special Meeting of Fine and Special Paper Committee at Richmond

The Fine and Special Paper Committee of the Technical Association of the Pulp and Paper Industry is planning to hold an open business meeting during the Fall meeting at Richmond on September 24 to 26. At this meeting the program to be prepared for the open meeting of the Committee in February, 1930, will be discussed in detail.



D. J. MURRAY GOLF TROPHY

It is believed that the general interest in the subject of durability and permanence of papers as shown by recent expressions and actions of the League of Nations, Government agents, Library Associations, Publishers and manufacturers, make this subject one of paramount interest and importance. For that reason, this Committee hopes to prepare a program for the meeting in February which will concentrate on the factors which enter into the durability and permanence of papers and methods of testing therefor.

It is planned to have each phase of this subject introduced by a critical review of present theories and of such evidence from the literature and from the trade as will open a general discussion on that phase which will be of real merit.

If you are interested in having this program of definite constructive value to the paper industry, please come to the meeting in Richmond prepared to help us plan it. The meeting will probably be held on the afternoon of Wednesday, September 25.

D. J. Murray Golf Trophy

An important annual affair of the Technical Association fall meeting is its golf tournament during the playing of which records of various kinds are made to say nothing of reputations.

The tournament this year will be on Wednesday afternoon, September 25th at the Country Club of Virginia one of the finest courses in the state.

The victor this year will, like the winner of the Wausau Competition of a year ago receive a beautiful trophy which will be presented by the D. J. Murray Manufacturing Company of Wausau, Wisconsin. A photograph of this trophy is herewith shown.

Centrifugal Compressor Catalogue

The new catalog on centrifugal compressors and blowers just issued by the De Laval Steam Turbine Company, Trenton, N. J., illustrates the remarkable progress being made by centrifugal machinery in many fields. Turbine-driven blast furnace blowers rated at 60,000 cu. ft. per minute against 30 lbs. maximum pressure at 2800 r. p. m. are shown. Both single and multistage blowers and boosters are shown for use in water gas plants, and in connection with coal gas retorts and coke ovens. Higher gas pressures are becoming general in the gas industry for the transmission of large quantities of gas through existing mains or to reduce the first cost of mains for long distance distribution. For this work large multistage compressors are used, driven by steam turbines or variable speed motors, the latter being connected to the compressor in some instances, by speed increasers. Centrifugal blowers and compressors are also applied to blowing Bessemer converters, supplying air to oil and gas fired furnaces, blowing cupolas, agitation of liquids, as in the activated sludge method of sewage purification and in flotation methods of ore separation, also for the pneumatic handling of materials, supercharging Diesel engines, etc. The De Laval book closes with a concise presentation of the mechanics and thermodynamics of the compression of gases and the physical properties of industrial gases, with numerous illustrative examples worked out in detail.

Move Research Laboratory to Passaic

General Naval Stores Company, Inc., has just made an important change in the location of its research laboratory, the transfer being from Cincinnati, Ohio to Passaic, N. J., where this Department will occupy spacious quarters on the premises of the Newport Chemical Works. There, research work in connection with the further development of Newport Wood Rosins will be continued on a much larger scale.

E. V. Romaine, technical director, Research Division, General Naval Stores Company, Inc., and H. J. Warmuth, chemist, together with their families have recently been transferred from Cincinnati to new homes in Passaic, N. J. where Messers Romaine and Warmuth will continue in charge of the company research laboratories lately moved from Cincinnati to that City.

O. E. Busener, district manager at Cincinnati for General Naval Stores Company, Inc., has just returned home after a very enjoyable vacation period spent at Lake Placid in the Adirondack Mountains, New York. Mrs. Busener and son, Billy, who accompanied him are remaining over in New York for an extended time with Mr. Busener's mother at her home in Greenwich Village.

Publication on Sheathing Papers

The Research Paper No. 85, a Study of Sheathing Papers, by F. T. Carson and F. V. Worthington, recently issued, by the Bureau of Standards, Washington, D. C., gives the results of a study of sheathing papers made at the request of the National Lumber Manufacturers Association.

In this work 36 samples of building papers made by 14 different manufacturers were examined. The kinds of papers ranged from ordinary wrapping to papers treated with asphalt or paraffin. In addition to the usual strength tests, the papers were tested for water resistance and air permeability. There was a wide difference in all of these properties. It was concluded from consideration of the test data and supplementary information that the thickness is relatively unimportant, that strength is of significance chiefly in handling the paper during erection, that water resistance and impermeability to air are of prime importance in making a wall weather-proof, and that most commercial papers are capable of performing this function sufficiently well.

American Writing Paper Co. Distributors Meet

Annual Service House Meeting of the Company at Holyoke, Mass. On Monday and Tuesday of This Week Is Well Attended by Representative Paper Merchants from Various Sections of the Country—Opening Session Is Addressed by President Sidney L. Willson—Those Who Attended

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, September 10, 1929—The annual service house meeting of the representatives and distributors of the American Writing Paper Company, Inc., opened today at the Hotel Nonotuck for a two days session. Delegates began to arrive yesterday afternoon and supper was served on the roof garden for the later arrivals. The opening session was addressed by President Sidney L. Willson of the company, Russell S. Madden, manager of sales, presiding.

Mr. Willson in his talk, discussed present market conditions and the outlook for the coming year. Miss Helen Kiely, chief chemist at the company laboratory told of her trip abroad this summer and what she had learned of European markets.

A general discussion followed which was continued in the afternoon session. Luncheon was served at noon and a group picture taken of the representatives and officials.

Dinner was served at 6:30 at which 150 sat down. The feature was the entertainment, a circus ring with real sawdust having been laid down and about 40 entertainers from New York City giving vaudeville, circus and musical acts.

A separate program was carried out for the women in the party. This morning a motor trip was taken to Northampton and Greenfield with luncheon at the Weldon Hotel in the latter place. The return trip was made through Amherst. Tonight the trip was to Springfield at 6 where dinner was had at the Hotel Kimball and a theater party followed.

Tuesday's Session

Business sessions were renewed Tuesday morning at 9:30 o'clock, concluding the serious part of the convention. At 11:30 a visit was paid to the new laboratory now located in the Wauregan paper mill plant. This has been enlarged and renovated so that it is practically a new plant.

At 12:30 the party left the hotel for the Orchards Golf clubhouse at South Hadley. Here a buffet luncheon was served and choice given of golf or bridge. The golf arrangements were in charge of E. M. Newhall and the bridge in charge of Mrs. Russell S. Madden.

The entertainment committee consisted of Sidney L. Willson, chairman; Russell S. Madden, Rufus D. W. Ewing, William J. Norton, Roland B. McDougall, Frederick A. Curtis, Fred Webster, Charles G. Neidel, Ralph N. Humes, William E. Sullivan, Leon P. Hatton, Eliot M. Newhall and Alexander Forbes.

The committee having charge of matters concerning the women of the party included Mrs. Russell S. Madden, chairman; Mrs. Leon M. Yoerg, Mrs. William L. Nixon, Mrs. Rudus D. W. Ewing and Mrs. Roland B. McDougall.

Among Those Who Attended

The list of those attending include the following:—

Sydney T. Jones and George S. Clerk of the Hudson Valley Company, Albany; Leroy Petty of the Whittaker Paper Company of Atlanta, Ga.; B. W. Gillespie of the Whittaker Paper Company of Baltimore; Messrs. Barker, Loring, Day and Campbell of the Arnold-Roberts Company of Boston; Mr. and Mrs. H. E. Waite, Mr. and Mrs. A. C. Hall, E. H. Little of the John Carter Company of Boston; C. A. Estey, Ashley Crowell, M. Wilson and M. V. Cuter of Carter, Rice Company of Boston; H. Carroll Jamerson of the Buffalo Myers Company of Buffalo, N. Y.; H. R. Henderson, W. L. Shea, W. P. Andrews of the Seeman Paper Company of Chicago; Messrs Ricker and Burgess of the Bradner Smith Company of Chicago; J. T. Hillyer of the Whitaker Paper Company of Chicago; H. D. Whitaker of the Whitaker Paper Company of Cincinnati, Ohio; J. E. Alcorn of the Alling & Cory Company of Cleveland, Ohio; George Momberg of the Whitaker Paper Company of Detroit, Mich.; H. B. Harwood of the John Carter Company of Hartford, Conn.; Mr. and Mrs. Walter Dearden and Mrs. Herbert Peck of the Rourke-Eno Company of Hartford; Mr. and Mrs. H. O. Smith of Jackson, Mich.; N. K. Woodward of the Midwestern Paper Company of Kansas City; Arnett W. Leslie of the John Leslie Company of Minneapolis, Minn.; Samuel Garney of the J. E. Linde Paper Company of Newark, N. J.; Benj. Glickemaus of the Beekman Paper and Card Company of New York City; Thomas Lathrop of the Lathrop Paper Company of New York City; Alfred Kinn and William Steadman of the J. E. Linde Company of New York City; Fred Appleton of the Miller & Wright Company of New York City; James Gilbert of the Whitaker Paper Company of New York City; C. H. Wilkinson of the Kent Paper Company of New York City; Charles E. Thomson Jr., of the Howard Publishing Company of Newtonville, Mass.; J. R. Howard of the Richie-Howarth Company of Philadelphia; Mr. and Mrs. Edward McCorkindale and John Quinn of Riegel and Company of Philadelphia; Mr. and Mrs. B. M. Johnson of the Whitaker Paper Company of Pittsburgh; Mr. and Mrs. Teetor of the B. M. Myers Company of Rochester; B. E. Reeves of the Alling & Cory Company of Rochester; S. Guy Megargee of Megargee Brothers of Scranton; Mr. and Mrs. Smeed of the Sioux Falls Company of Sioux Falls; Frank Wright of the Acme Paper Company of St. Louis; Festus Shaughnessey of the S. Kniep-Haw Company of St. Louis; J. B. Jones of the Western Newspaper Union of Omaha; Richard Curtin of the Ohio & Michigan Paper Company of Toledo, O.; Graham Blandy 2d of the Charles A. Esty Company, Worcester; C. W. Townsend of the Logan Swift Corporation, Worcester; Mr. and Mrs. L. D. Post of The Paper Mill; H. Phillips of the Erving Paper Company of Erving.

Indianapolis Demand Not Satisfactory

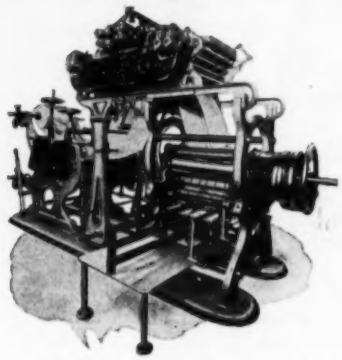
[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., September 9, 1929.—On the whole, the local paper jobbers have been unable to generate much enthusiasm among the buyers in fall stocks. The tendency on the part of the consumer is to permit the jobber and manufacturer to carry the stock loads and to buy only in such amounts as can be used quickly. In some quarters, particularly in the finer grades, there has been a little improvement, due largely to the opening of the fall season, the starting of schools and increased direct by mail advertising on the part of the merchants, but the general trade is not what the industry wants or expected.

There continues to be a good demand from the box and carton manufacturers and many of them report orders that are very gratifying for fall and early winter. Inquiries continue to increase for quotations on glassine and holiday grades and it would appear now that more of this stock will be used this year than ever before.

Demand for toilet and sanitary papers, particularly those going into the manufacture of plates, cups and other largely summer merchandise, is falling off rapidly. News print seems fairly well stabilized and the demand during the last week increased somewhat. Cheaper papers are inactive and building paper demand has dropped materially.

H·S MACHINE CO.



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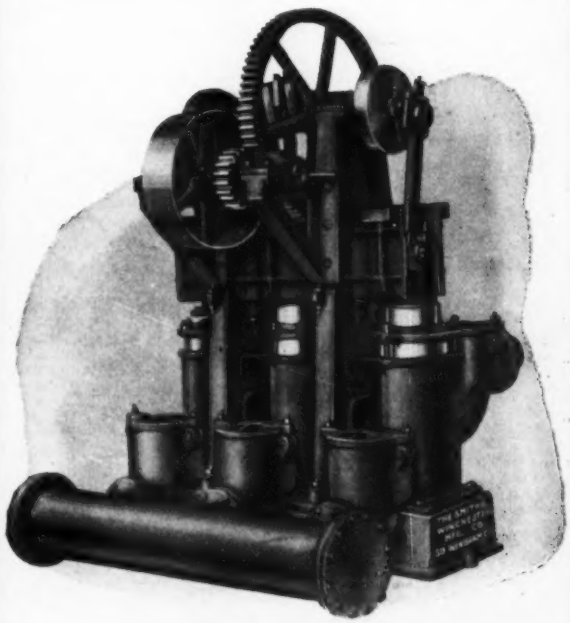
is on a par with all other Pulp and Paper Mill Equipment we manufacture. The fact of its satisfactory use in leading mills attests its efficiency.



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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 7, 1929

SUMMARY

Cigarette paper	270 cs.
Wall paper	15 bls., 3 cs.
Paper hangings	15 bls., 7 cs.
News print	1188 rolls
Printing paper	200 cs.
Wrapping	66 cs.
Packing paper	5 bls., 67 cs.
Filter paper	19 cs.
Tissue paper	148 cs.
Colored paper	131 cs.
Decalcomania paper	41 cs.
Baryta coated paper	218 cs.
Surface coated paper	89 cs.
Photo paper	4 cs.
Writing paper	26 cs.
Writing paper and envelopes	1 cs.
Coutchouc paper	5 cs.
Marble paper	9 cs.
Silk paper	27 cs.
Transparent greaseproof paper	24 cs.
Fancy paper	2 cs.
Miscellaneous paper	128 cs.

CIGARETTE PAPER

P. J. Schweitzer, Pr. Johnson, Marseilles, 141 cs.

De Manduit Paper Corp., Tuscania, London, 5 cs.

De Manduit Paper Corp., Vincent, Havre, 124 cs.

WALL PAPER

Heemsoth Basse & Co., Pr. Harding, Bremen, 1 cs.

R. F. Downing & Co., Minnesota, London, 15 bls.

A. L. Diament & Co., Homeric, Southampton, 2 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 8 bls.

W. H. S. Lloyd & Co., Adriatic, Liverpool, 2 cs.

W. H. S. Lloyd & Co., Minnesota, London, 5 bls., 3 cs.

A. C. Dodman, Jr., Inc., Scythia, Liverpool, 1 bls.

Whiting & Patterson Co., Inc., Homeric, Southampton, 2 cs.

PAINTED PAPER

W. H. S. Lloyd & Co., Ile de France, Havre, 3 cs.

NEWS PRINT

Journal of Commerce, Korsholm, Kotka, 65 rolls.

H. Reeve Angel & Co., Inc., Korsholm, Kotka, 549 rolls.

Parsons & Whittemore, Inc., Muenchen, Bremen, 347 rolls.

Stora Kopperberg Corp., Kungsholm, Gothenburg, 78 rolls.

Perkins Goodwin & Co., New York, Hamburg, 72 rolls.

——, New York, Hamburg 77 rolls.

PRINTING PAPER

E. Dietzgen & Co., Statendam, Rotterdam, 76 cs.

C. Steiner, Statendam, Rotterdam, 19 cs.

P. C. Zuhlke, Muenchen, Bremen, 6 cs.

R. Wilson Paper Corp., Cameronia, Glasgow, 20 cs.

P. C. Zuhlke, Lapland, Antwerp, 50 cs.

E. Dietzgen & Co., New York, Hamburg, 25 cs.

Hensel, Bruckman & Lorbacher, New York, Hamburg, 4 cs.

WRAPPING PAPER

Birn & Wachenheim, Lapland, Antwerp, 66 cs.

PACKING PAPER

Castle & Overton, Inc., Sac City, Rotterdam, 5 bls.

Globe Shipping Co., Lapland, Antwerp, 5 cs.

American Express Co., New York, Hamburg, 62 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 19 cs.

TISSUE PAPER

Old Master Paper & Pulp Co., New York, Hamburg, 98 cs.

Parsons & Whittemore, Inc., Scythia, Liverpool, 36 cs.

Brooks Paper Co., Scythia, Liverpool, 5 cs.

Meadows, Wye & Co., Scythia, Liverpool, 8 cs.

Peerless Roll Leaf Co., Mauretania, Southampton, 1 cs.

COLORED PAPER

S. Gilbert, Pr. Harding, Bremen, 27 cs.

F. L. Kramer & Co., Pr. Harding, Bremen, 4 cs.

J. Beckhard, Pr. Harding, Bremen, 9 cs.

W. Bersch & Co., Muenchen, Bremen, 14 cs.

Borden Riley Paper Co., Lapland, Antwerp, 5 cs.

P. H. Petry & Co., New York, Hamburg, 2 cs.

E. Dietzfien & Co., New York, Hamburg, 69 cs.

E. Henningson Co., Pr. Roosevelt, Bremen, 1 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 41 cs. (duplex).

BARYTA COATED PAPER

Globe Shipping Co., Republic, Bremen, 67 cs.

Globe Shipping Co., Pr. Roosevelt, Bremen, 151 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Muenchen, Bremen, 49 cs.

P. C. Zuhlke, Lapland, Antwerp, 1 cs.

G. Gennert, Lapland, Antwerp, 10 cs.

Gevaert Co. of America, Lapland, Antwerp, 22 cs.

Brown Bros. & Co., New York, Hamburg, 5 cs.

Globe Shipping Co., New York, Hamburg, 2 cs.

PHOTO PAPER

T. F. Wilmot & Co., Tuscania, London, 1 cs.

J. J. Gavin, Mauretania, Southampton, 3 cs.

WRITING PAPER

J. D. Smith, Cuba, Havre, 1 cs.

Jay Thorpe, Cuba, Havre, 4 cs.

Coenca Morrison Co., Cuba, Havre, 9 cs.

Guibout Freres, Cuba, Havre, 2 cs.

Gimble Bros., Vincent, Havre, 1 cs.

M. J. Corbett & Co., Vincent, Havre, 1 cs.

Kaufmanns', Vincent, Havre, 1 cs.

American Express Co., Vincent, Havre, 1 cs.

Globe Shipping Co., Mauretania, Southampton, 6 cs.

WRITING PAPER AND ENVELOPES

Saks & Co., American Trader, London, 1 cs.

COUTCHOUC PAPER

Globe Shipping Co., Muenchen, Bremen, 5 cs.

MARBLE PAPER

E. Daiber, Lapland, Antwerp, 9 cs.

SILK PAPER

Meadows, Wye & Co., Sac City, Rotterdam, 27 cs.

TRANSPARENT GREASEPROOF PAPER

Central Hanover Bank & Trust Co., New York, Hamburg, 24 cs.

FANCY PAPER

Hensel, Bruckman & Lorbacher, Ile de France, Havre, 2 cs.

MISCELLANEOUS PAPER

Standard Products Corp., Cuba, Havre, 118 cs.

Globe Shipping Co., Cuba, Havre, 5 cs.

Guibout Freres, Ile de France, Havre, 2 cs.

J. E. Bernard & Co., Homeric, Southampton, 3 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., Statendam, ——, 56 bls. rags.

N. Y. Trust Co., Tuscania, London, 30 bls. rags.

A. W. Fenton, Inc., Muenchen, Bremen, 52 bls. rags.

F. Stern, Muenchen, Bremen, 222 bls. rags.

Manufacturers Trust Co., H. Jasper, Antwerp, 80 bls. flax waste.

A. H. Searle, Inc., Cameronia, Glasgow, 133 bls. paper stock.

C. R. Spence, Cameronia, Glasgow, 55 bls. rags.

Castle & Overton, Inc., Cameronia, Glasgow, 11 bls. rags.

Anglo South American Trust Co., Cameronia, Glasgow, 131 bls. rags.

Brown Bros. & Co., Cameronia, Glasgow, 56 bls. rags.

T. D. Downing & Co., Cameronia, Glasgow, 78 bls. rags.

J. Cohen & Sons, Minnesota, London, 18 bls. rags.

W. Schall & Co., Sac City, Rotterdam, 210 bls. bagging.

Gallagher & Ascher, Sac City, Rotterdam, 15 bls. rags.

B. D. Kaplan, New York, Hamburg, 19 bls. rags.

A. W. Fenton, Inc., Scythia, Liverpool, 39 bls. rags.

J. Cohen & Sons, Scythia, Liverpool, 40 bls. rags.

French American Banking Corp., Examelia, Bari, 453 bls. rags.

Equitable Trust Co., Examelia, Constantinople, 87 bls. rags.

Chemical National Bank & Trust Co., Pr. Roosevelt, Bremen, 107 bls. bagging; 79 bls. rags.

E. Butterworth & Co., Inc., Coelleda, Dublin, 120 bls. rags.

National City Bank, Exarch, Constantinople, 203 bls. fleshings.

E. J. Keller Co., Inc., Exarch, ——, 246 bls. rags.

Brown Bros. & Co., Gourko, Newcastle, 54 bls. bagging; 177 bls. rags.

Castle & Overton, Inc., Gourko, Antwerp, 112 bls. rags.

Bank of New York, Gourko, Antwerp, 34 bls. rags.

E. Butterworth & Co., Inc., Vincent, Dunkirk, 164 bls. waste.

Chase National Bank, Vincent, Dunkirk, 15 bls. rags.

N. Y. Trust Co., Vincent, Havre, 47 bls. rags.

Castle & Overton, Inc., Capillo, B. Ayres, 407 bls. rags.

Guaranty Trust Co., Tergestea, Venice, 68 bls. rags.

Bank of New York, Tergestea, Venice, 62 bls. rags.

W. Schall & Co., Tergestea, Venice, 123 bls. rags.

E. J. Keller Co., Inc., Bellepline, ——, 106 bls. rags.

OLD ROPE

F. Stern, Pr. Harding, Bremen, 62 bls.

F. Stern, Muenchen, Bremen, 59 bls.

Irving Trust Co., Sac City, Rotterdam, 87 bls.

Brown Bros. & Co., Gourko, Newcastle, 191 bls.

CASEIN

A. Hurst & Co., Statendam, Rotterdam, 206 bags.

Casein Manfg. Co., Brazilian Prince, B. Ayres, 650 bags, 35,172 ks.

Casein Manfg. Co., Northern Prince, B. Ayres, 796 bags, 40,322 ks.

WOOD PULP

O. E. Kiaer, Korsholm, Stockholm, 600 bls. wood pulp.

——, Korsholm, Viborg, 765 bls. sulphate.

——, Korsholm, Viborg, 640 bls. sulphite.

——, Korsholm, Kotka, 511 bls. sulphite.

Polaris Shipping Co., Amalienborg, Sonora, 1,450 cords wood pulp.

Atterbury Bros., Inc., Oscar II, Oslo, 500 bls. wood pulp, 100 tons.

Irving Trust Co., Oscar II, Oslo, 125 bls. wood pulp, 25 tons.

Bulkley Dunton & Co., Kungsholm, ——, 900 bls. sulphate.

E. M. Sergeant & Co., Kungsholm, Gothenburg, 150 bls. dry soda pulp.

Johanson Wales & Sparre, Inc., Kungsholm, Gothenburg, 310 bls. wood pulp.

Price & Pierce, Ltd., Kungsholm, Gothenburg, 1,625 bls. wood pulp.

E. M. Sergeant & Co., Norefjord, Oslo, 150 bls. wood pulp.

Chemical Bank & Trust Co., Norefjord, Tofte, 180 bls. sulphite.

J. Andersen & Co., Norefjord, Greaker, 2,160 bls. sulphite.

O. E. Kiaer, Norefjord, Greaker, 750 bls. sulphite.

WOOD PULP WADDING

Birn & Wachenheim, Statendam, Rotterdam, 100 bls.

WOOD PULP BOARDS

Lagerloef Trading Co., Korsholm, Kotka, 247 rolls, 5 bls.

WOOD FLOUR

Bakelite Corp., Sac City, Rotterdam, 972 bags, 64,380 ks.

B. L. Soberski, Norefjord, Fredericksted, 3,000 bags.

PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 7, 1929

Central National Bank, Korsholm, Stockholm, 600 bls. sulphite.

——, Korsholm, Viborg, 12,489 bls. sulphite.

——, Korsholm, Kotka, 4,484 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 7, 1929

Philadelphia National Bank, London Corp., London, 22 bls. rags.

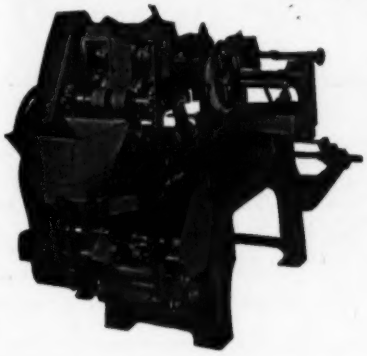
Lang Co., London Corp., London, 117 bls. rags.

Philadelphia National Bank, Examelia, Barcelona, 304 bls. rags.

Castle & Overton, Inc., Examelia, Barcelona, 139 bls. rags.

V. Galaup, Examelia, Bari, 48 bls. rags.

(Continued on page 74)



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Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

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NO STRAINER STOPPAGES
NO SAND RENEWALS
CRYSTAL CLEAR WATER ALWAYS

HUNGERFORD & TERRY, INC.
CLAYTON, N. J.

Imports of Paper and Paper Stock

(Continued from page 72)

E. M. Sergeant & Co., Norefjord, Oslo, 150 bls. wood pulp.
——, Norefjord, Oslo, 600 bls. sulphite.
Chemical Bank & Trust Co., Norefjord, Tofte, 1,200 bls. sulphite; 1,800 bls. sulphite.
Atterbury & McKelvey, Norefjord, Tofte, 600 bls. sulphite.
Fidelity Trust Co., Tergestea, Bari, 314 bls. rags.
E. J. Keller Co., Inc., Bilderdyk, ——, 189 bls. rags.
E. J. Keller Co., Inc., Bellepline, ——, 38 bls. rags.
E. J. Keller Co., Inc., Hinnoy, ——, 150 bls. rags.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 7, 1929

Atterbury Bros., Inc., Brazilian Prince, B. Ayres, 874 bags casein, 50,040 ks.
1st National Bank of Boston, Brazilian Prince, B. Ayres, 417 bags casein, 25,020 ks.
——, Korsholm, Viborg, 3,696 bls. wood pulp.
Parsons & Whittemore, Inc., Pr. Johnson, Marseilles, 196 bls. wood pulp.
Atkinson Haserick Co., Pr. Johnson, Genoa, 9 cs. paper.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 7, 1929

S. Shapira, Vincent, Dunkirk, 155 bls. rags.
Congoleum Nairn Co., Vincent, Dunkirk, 506 bls. rags.
V. Galaup, Vincent, Dunkirk, 58 bls. rags.
Kalbfleisch Corp., Vincent, Havre, 197 bags casein, 14,956 ks.
Congoleum Nairn Co., Vincent, Havre, 141 bls. rags.
Castle & Overton, Inc., Vincent, Havre, 282 bls. rags.

Paper Salesmen to Compete for Golf Cup

The New York Division of the Salesmen's Association of the Paper Industry will hold its September golf outing at the Leewood Golf Club, Tuesday, September 17. This is the outing at which the New York Division competes for the Harbison Cup. This cup was presented for team competition in 1928 by R. B. Harbison, manager of the Chicago sales office of the International Paper Company, and is to become the permanent property of the division first winning the annual tournament of the Salesmen's Association three times.

Under the rules of the association's tournament play, each division selects a certain date in September for their tournament and the eight best net scores from that division constitute the team score. In deciding the winner of the tournament the division team that takes the smallest number of strokes above par for the course on which it plays adjudged the winner. If less than eight men of the division play, that division is automatically disqualified.

R. D. W. Ewing, of the American Writing Paper Company, is chairman of the association's Golf Committee and handles the details of the tournament with the assistance of the local chairmen. The name of the division winning the Harbison Trophy together with the winners of the various individual prizes will be announced at the Chicago Division luncheon on Tuesday, October 8.

S. C. Knode, of Albemarle Paper Manufacturing Company, president of the Salesmen's Association, is presenting a President's Trophy for individual competition this year. This trophy will be awarded to the member of the Salesmen's Association making the best net score on either nine of the eighteen holes of the tournament.

Phil Howard, of the *American Paper Merchant* is also presenting a trophy for the best net score on the eighteen holes, and in addition, each division has various prizes for local competition by both members and guests.

Henry Dwyer Loses Four Fingers

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., September 3, 1929.—Henry Dwyer, master mechanic in the plant of Finch Pruyn & Co., is confined to the city hospital suffering from injuries sustained during the past week when four fingers of his left hand were severed. It is believed that his hand came in contact with a cutting device or was caught in the moving calendar rolls of a paper machine. Following an operation the company physician said that the fingers were completely severed at the time of injury and that the injured member appeared to have been in contact with a saw. The injured man's condition is reported good and he will be discharged from the hospital within a few days. He has been identified with the paper firm for many years, being one of the oldest and most valued employees.

News Print Accountants and Engineers to Meet

A meeting of cost accountants and engineers of News Print Service Bureau members in the Lake States will be held at the Marinette Hotel, Marinette, Wis., in co-operation with the Northwestern Division of the Superintendents Association on Friday, September 20, commencing at 2 p. m. The following program has been arranged:

Afternoon Session—"High Pressure Steam in Pulp and Paper Mills, Its Application," by T. A. Marsh, Combustion Engineering Corporation—Practical Experience in Pulp and Paper Mills, W. F. Thiele, Consolidated Water Power and Paper Company; G. H. Suhs, Rhinelander Paper Company; E. P. Gleason, Nekoosa-Edwards Paper Company and Grover Keeth, Marathon Paper Mills Company, "Bonus Systems in Pulp and Paper Mills." Address by J. P. Hagenauer, L. V. Estes Inc. Experience, Fred Deutsch, Marathon Paper Mills Company and J. K. Vanetta, Nekoosa-Edwards Paper Company.

Dinner—6:30 p. m., Marinette Hotel. Toastmaster, J. H. Slater. "Aviation in the Paper Industry." Speaker to be announced later.

Evening Session—"The Control of Costs Through Standards," by G. A. Ware, News Print Service Bureau. Discussion. Question box.

Finnish Chemical Pulp Active

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 11, 1929.—A renewed activity has been observable in the Finnish chemical pulp market during the past few weeks. Prices on the whole are also showing a tendency to harden, particularly those quoted on sulphites. The kraft market has been less firm but an improvement is looked for in the near future. There has already been a considerable demand for this grade from American buyers. Sales of mechanical pulp have been normal for this season of the year.

Coty Machine Co. Ships Bag Machines

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., September 9, 1929.—During the past week the Coty Machine Company completed and shipped to Wellsburg, W. Va., four large paper bag machines for installation in mills at that place. Three of the machines will be placed in the Feorgian Sherriad Company's mill while the other will be erected in the plant of the Hammond Bag Company. Paul Scharch, master mechanic at the local plant, is supervising the installation of the new equipment which will require about two weeks.

West Virginia to Build Filter Plant

The West Virginia Pulp and Paper Company has awarded contract to Morton C. Tuttle Company of Boston for the construction of a new filter plant at its mill at Luke, Md.

The new plant will replace present inadequate filter capacity; will be of modern design, having a capacity of 15,000,000 gallons per day. The plant is being designed by Malcolm Pirney.

Ticonderoga Machine Works
Ticonderoga, N. Y., U. S. A.
MANUFACTURERS OF
WARREN IMPROVED CALENDER DOCTORS
With Flexible Blades, Universal Adjustment and Control (PATENTED)
WARREN IMPROVED PATENT DOUBLE DRUM WINDERS
Patent BALL VALVE Hydrant
Stock Circulating Systems and
other Paper Mill Specialties
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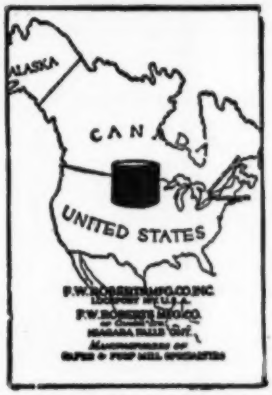
Successors to
H. C. Clark & Son Machine Co.
PAPER MILL MACHINERY
LEE, MASS.
Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—
Cylinder Molds—Marshall Drives—Slitters and Rewinders—Reels—Dryers with Improved Packing Boxes—Wet Machines—Gun Metal and Rubber Rolls—Rolls Reground.

BURRS


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For Pulp and Paper Mills
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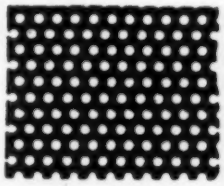
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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 11, 1929.

Demand for the various standard grades of paper was fairly encouraging during the past week and the local market ruled steady. Production has been maintained in satisfactory volume and the output is being freely absorbed. Sales forces of the leading paper organizations are beginning a strenuous campaign for the closing months of the year and are generally optimistic. Prices are holding to schedule, in most instances.

News print production is again running at around 80 per cent of capacity in the United States and Canada, following curtailed operations during the holidays. Shipments are moving at a steady pace and accumulations are not excessive. Prices are holding at previously recorded levels and the outlook for the future is brighter than for some time past.

The paper board situation is practically unchanged. Demand for the various grades is persistent, however, and better prices are anticipated in the near future, in some quarters. Steadiness continues to prevail in the fine paper market and there is a fair inquiry for tissues. The coarse paper market is showing signs of improvement and wrapping paper is moving in excellent volume.

Mechanical Pulp

Conditions in the ground wood market are satisfactory for the time of year. Offerings of both domestic and imported ground wood continue rather limited due to curtailed operations here and abroad. Contract shipments are going forward in a normal manner. Quotations are generally holding to former levels and there is little talk of concessions around.

Chemical Pulp

The feature of the chemical pulp market is the continued strength of domestic and imported easy bleaching sulphite, orders for which are being booked well ahead into the forthcoming year. Bleached sulphite remains steady and quotations on other grades are holding to schedule without difficulty. Inquiries for future requirements are being received in satisfactory volume for the season.

Old Rope and Bagging

Trading in the old rope market was moderately active during the past week. Demand for both domestic and imported old manila rope is fairly heavy and prices remain steady and unchanged. Small mixed rope is moving in good volume. The bagging market is showing some signs of improvement. Scrap bagging is in better request and gunny bagging is going forward in a normal manner.

Rags

While most of the business transacted in the local rag market was along routine lines, inquiries were more numerous and the outlook for the future is brighter. Offerings of cotton cuttings were rather limited and prices ruled steady and unchanged. Fancy shirt cuttings were in excellent request at firm quotations. The foreign rag market is practically unchanged

Waste Paper

Mill interest in the paper stock market is gradually awakening, judging by the number of inquiries being received for future business. The lower grades are in somewhat improved demand from the board mills. No. 1 mixed paper is in better request than of late and with offerings rather scarce, prices have advanced from .42½ to .47½ to .47½ to .50. Soft white shavings are also firmer and are now quoted at from 2.55 to 2.65.

Twine

During the past week business in the twine market showed some signs of revival after the seasonal holiday slump. Twine manufacturers and dealers are anticipating an active time during the closing months of the year in conjunction with the usual increased demand for wrapping paper. Prices of the various grades are practically unchanged.

Boston Paper Market Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 9, 1929.—A cheerful tone prevails in the wholesale paper market here, based on business already transacted and the prospect of much more to come. One dealer in fine papers states that August was the biggest month in the history of the firm. Activity following the holiday seems to have equalled expectations generally. The position of coarse paper is apparently improving and a sizable volume of orders has been booked since Labor Day.

The price situation in box board persists, although there has been considerable operation in this commodity. Box manufacturers as a whole have been securing some good orders, so that the demand for their raw material has been more or less lively.

Paper stock purveyors intimate that the market is fairly steady, although not particularly active. Some of the paper manufacturers are still running short time and are handicapped by lack of water supply on account of the low rainfall, so the demand for old papers and rags is influenced to some extent, at least, by this factor. Values remain at about the same levels, with few fluctuations. Old newspapers are a bit higher, and quotable at a range of .55 to .57½, compared with previous one of .50 to .55. In foreign rags, old linsey garments have declined to 1.80 to 1.85 from a former range of 1.85 to 1.90.

American Writing Salesmen Meet

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 10, 1929.—A two day conference of the American Writing Paper Inc. was held Friday and Saturday about 25 salesmen from all over the country attending. Business sessions were held at the offices of the company and luncheons and dinners at the Hotel Nonotuck. Enjoyable outings were a feature of the convention. On Friday night the salesmen and their hosts went to "World's End" a pleasure resort on Wilbraham mountain. Saturday night the salesmen were the guests of the executives of the company for a trip to Old Lyme, Conn. A private yacht was chartered at Middletown and trip to and from Old Lyme made by boat. Dinner was had at Ferry Tavern, a famous hostelry in that place.

A Correction

A typographical error in the article entitled "Stoker Firing for High Pressure Boilers" in the Power Plant Section of the PAPER TRADE JOURNAL of August 29, made it appear that the total investment for the changes at the Thilmany Pulp and Paper Company's plant was $30,000,000. The proper figure, of course, should have been $30,000.00.

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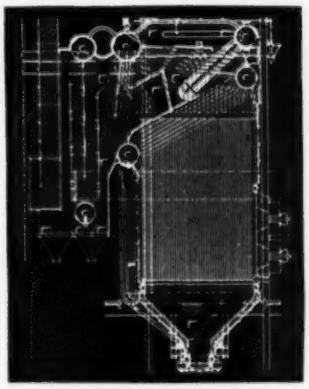
AT **SKANEATELES FALLS, N.Y.**



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Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 11, 1929.

BLANC FIXE.—Trading in the blanc fixe market was moderately active during the past week. Prices are generally holding to previously quoted levels. The pulp is selling at from $42.50 to $45.00 per ton, in bulk, while the powder is still offered at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Contract shipments are moving in fair volume for the season. Prices are holding to schedule without difficulty. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Conditions in the casein market were irregular. Domestic casein is now quoted at from 15¼ cents to 16 cents per pound. Argentine standard ground is selling at from 15¼ cents to 16 cents per pound, and finely ground at from 16 cents to 16½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Supplies of caustic soda are moving into consumption in excellent volume. Inquiries for future needs are numerous. Quotations remain steady. Solid caustic soda is offered at from $2.90 to $2.95, and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. The contract movement is well up to average for the time of year. Prices remain unaltered. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Most of the business transacted in the chlorine market during the past week was along routine lines. Prices are holding to schedule. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market was more buoyant and prices were much firmer. The grades of gum rosin used in the paper mills are now quoted at from $9.00 to $9.05 per 280 pounds, in barrels, on dock. Wood rosin is still selling at from $6.75 to $7.80 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Demand for salt cake is persistent. Offerings continue decidedly scarce and prices are firm with a tendency to advance in the near future. Salt cake is quoted at from $17 to $21 per ton, while chrome salt cake is still selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Production has been heavy enough to take care of current requirements. Prices are generally holding to previously quoted levels. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—No radical changes were reported in the starch market. Shipments against contract are going forward in normal volume. Prices are unaltered and reports of shading are infrequent. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—No radical changes were reported in the sulphate of alumina market. Contract shipments are moving at a satisfactory pace. Prices remain unchanged. Commercial grades are quoted at from $1.40 to $1.55 and iron free at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Some improvement was noticed in the sulphur market. Producers are generally booked well ahead. Sulphur is still quoted at $18 per ton, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Business in the talc market is satisfactory for the time of year. Supplies are moving into consumption in good volume. Prices are holding to previously quoted levels. Domestic talc is quoted at from $16 to $18 per ton, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip	47.50	@50.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	52.50	@ —
85 Test Jute Liner	55.00	@ —

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.40
Easy Bleaching	3.00	@ 3.25
No. 1 strong unbleached	2.70	@ 3.00
Mitscherlich unbleached	2.80	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.40	@ 2.65
No. 2 Kraft	2.35	@ 2.50
Sulphate—		
Bleached	3.60	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.65	@ 3.00
News Sulphite	2.50	@ 2.70
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.10	@ 3.25
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.50	@ 8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Blue Overall	7.50	@ 8.00
Washables	4.75	@ 5.25
Fancy	5.75	@ 6.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.50	@ 8.25
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	2.00	@ 2.10
Dutch Blue Cottons	2.25	@ 2.40
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.15	@ 2.25
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.55	@ 1.60
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.25	@ 4.40
Domestic	4.75	@ 5.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, white, No. 1	2.55	@ 2.65
White envelope cuttings	3.00	@ 3.50
Flat Stock—		
Stitchless	1.50	@ 1.60
Overissue Mag.	1.50	@ 1.60
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.00	@ 1.10
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.50	@ 1.75
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.57½	@ .60
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.85	@ 2.00
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.75	@ .80
Strictly Folded	.60	@ .65
No. 1 Mixed Paper	.47½	@ .50
Common Paper	.30	@ .35

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¾
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07½
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.25	@	1.35
Solid Books	1.25	@	1.30
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.75	@	.80
Folded News (overissue)	.80	@	.85
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.60	@	.65
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	32.50	@	75.00
News Board	35.00	@	40.00
Chip Board	32.00	@	40.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.02½	@	.02¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11¾
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05¾
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.75	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.40	@	.45
Overissue News	.65	@	.70
Old Newspapers	.55	@	.57½
Box Board, Chip	.55	@	.60

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.75
Manila Rope—			
Foreign	—	@	4.50
Domestic	—	@	4.75
Transmission Rope	2.00	@	2.25
Mixed Strings	1.25	@	—
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.00	@	1.10
Scrap Burlaps	1.37½	@	1.50
Scrap Sisal	1.80	@	2.00
Scrap Sisal for shredding	1.85	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.12½
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	—
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—
(Delivered Toronto)			
News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

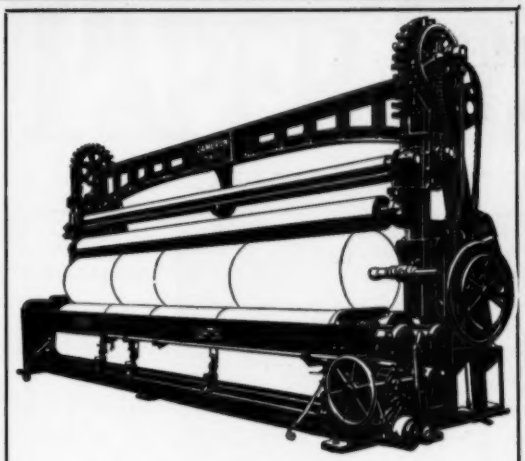
Ground Wood	30.00	@	31.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.10	@	.10½
Fancy Shirt Cuttings	.05½	@	—



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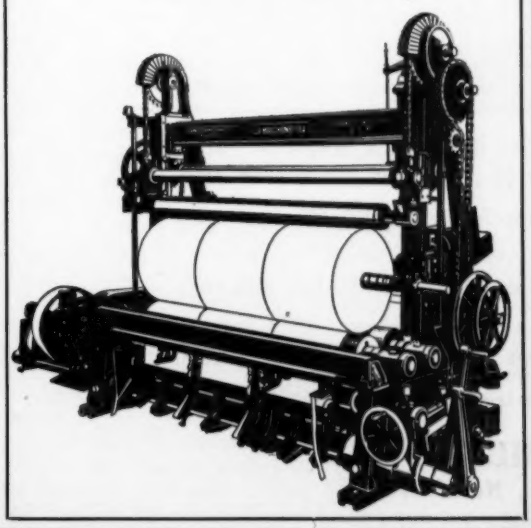

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TABLE OF CONTENTS

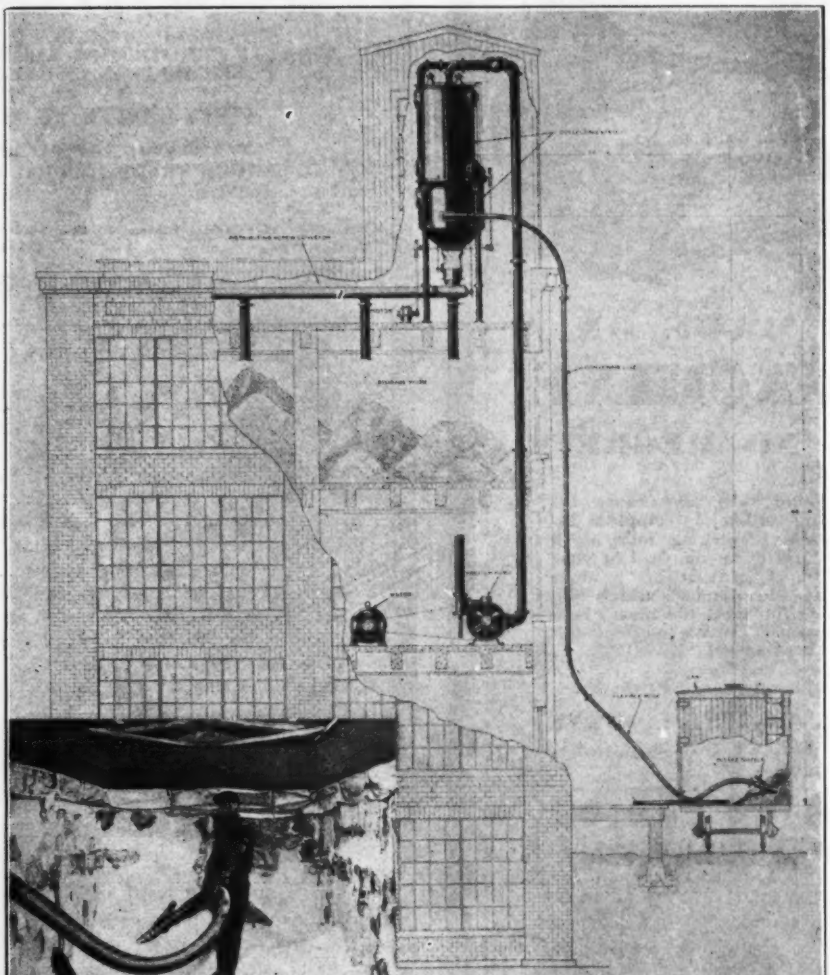
Copyright, 1929, by the Lockwood Trade Journal Co., Inc.

Pulp and Paper Production for July 35
Atmore Hopes to Get Paper Mill 35
Pennsylvania Mill Broaden Operations 36
Bayless Mfg. Co. to Continue Production 36
Float Wood to National Plant 37
News Print Production for August 37
Standardization of Printing Papers 37
Ontario Paper Manufacturers Well Employed 38
Fir-Tex Company to Start Construction 39
Puget Sound Pulp Co. Lets Contracts 39
Paper Demand Moderately Active in Chicago 40
Western Forest Fires Entail Great Loss 40
International Secures More Timber Holdings 42
To Make New Type of Fruit Boxes 42
Making Hand Made Sheets of Uniform Thickness .. 44
H. L. Zellerbach Heads Crown Zellerbach Corp. 44
Standardization 46
Construction News 48
New Companies 50
Albany Container Plant To Triple Output 50
Obituary 54
New York Trade Jottings 56
Editorial 58
Valdosta May Get Pulp Plant 59
German Mill Officials Visit Glens Falls 59
Master Printers Explain Waste Paper Bureau 59
Start Work on Portland Chemical Plant 59
Technical Section
Current Paper Trade Literature 61
Bibliography of Wood Pulp Strength Testing .. 62
Examinations for Paper Technologists 72
Sales of Clay in 1928 72
Cost Section 73
Pacific Board Co. to Add Equipment 76
News of the Boston Trade 76
Sales of Gummed Tape Expand on Coast 76
Imports of Paper and Paper Stock 80
New York Market Review 84
Miscellaneous Markets 86
Market Quotations 86

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 91, 92, 93, 94

AIR WASHED PULVERIZED CLAY



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